HEALTH RELATED BEHAVIOURS AND QUALITY OF LIFE AMONG PEOPLE WITH NON COMMUNICABLE DISEASES IN RURAL AND URBAN TAMIL NADU – A COMPARATIVE STUDY

Dissertation submitted to

THE TAMIL NADU Dr. MGR MEDICAL UNIVERSITY

In partial fulfilment of the requirements for the degree of

M.D. BRANCH XV

COMMUNITY MEDICINE

THE TAMIL NADU Dr. MGR MEDICAL UNIVERSITY,

CHENNAI, TAMIL NADU.

APRIL 2016

CERTIFICATE OF THE GUIDE

This is to certify that the dissertation titled **"HEALTH RELATED BEHAVIOURS AND QUALITY OF LIFE AMONG PEOPLE WITH NON COMMUNICABLE DISEASESIN RURAL AND URBAN TAMIL NADU – A COMPARATIVE STUDY"** is a bonafide work carried out by **Dr. BALAJI.S.M.**, Post Graduate student in the Institute of Community Medicine, Madras Medical College, Chennai-3, under my supervision and guidance towards partial fulfilment of the requirements for the degree of M.D. Branch XV Community Medicine and is being submitted to The Tamil Nadu Dr. M.G.R. Medical University, Chennai.

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CERTIFICATE

This is to certify that the dissertation titled **"HEALTH RELATED BEHAVIOURS AND QUALITY OF LIFE AMONG PEOPLE WITH NON COMMUNICABLE DISEASESIN RURAL AND URBAN TAMIL NADU – A COMPARATIVE STUDY"** is a bonafide work carried out by **Dr. BALAJI. S.M.**, Post Graduate student in the Institute of Community Medicine, Madras Medical College, Chennai-3, under the guidance of **Dr. JOY PATRICIA PUSHPARANI, M.D.,** towards partial fulfilment of the requirements for the degree of M.D. Branch XV Community Medicine and is being submitted to The Tamil Nadu Dr. M.G.R. Medical University, Chennai.

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I, solemnly declare that the dissertation titled **"HEALTH RELATED BEHAVIOURS AND QUALITY OF LIFE AMONG PEOPLE WITH NON COMMUNICABLE DISEASESIN RURAL AND URBAN TAMIL NADU – A COMPARATIVE STUDY",** was done by me under the guidance and supervision of **Dr. JOY PATRICIA PUSHPARANI, M.D.,** Professor, Institute of Community Medicine, Madras Medical College, Chennai-3. The dissertation is submitted to The Tamil Nadu Dr. M.G.R. Medical University towards the partial fulfilment of the requirement for the award of M.D. degree (Branch XV) in Community Medicine.

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ACKNOWLEDGEMENT

I gratefully acknowledge and sincerely thank **Dr. R.VIMALA, M.D.,** Dean, Madras Medical College, Chennai-3 for granting me permission to carry out this community based study.

I would like to extend my sincere and profound gratitude to **Dr. JOY PATRICIA PUSHPARANI, M.D.,** Professor, Institute of Community Medicine, Madras Medical College, Chennai-3 for having been the ever present guiding and driving force behind my study and without whom this study would not have taken its present shape.

I also thank **Dr. T.S. SELVA VINAYAGAM, M.D., D.P.H., D.N.B.,** Director, Institute of Community Medicine, Madras Medical College, for giving his valuable suggestions for the study.

I extend my sincere gratitude to **Dr. S. SUDHARSHINI, M.D.,** Assistant Professor, Institute of Community Medicine, Madras Medical College, who helped me immensely by extending her knowledge and experience during the course of this study.

I also thank **Dr. R. ARUNMOZHI, M.D**., Associate Professor, Institute of Community Medicine, Madras Medical College, for her extended support and encouragement during the course of this study.

I also thank **Dr. R. RAMASUBRAMANIAN, M.D**., Assistant Professor, Institute of Community Medicine, Madras Medical College, for his support rendered.

I would like to thank **Dr. CHITRA, M.D.,** Associate Professor, Institute of Community Medicine, Madras Medical College, for her expert suggestions and encouragement during the course of this study.

I would like to thank **The Commissioner & Deputy Commissioner (Health)**, Corporation of Chennai for giving me permission to conduct the study among the population of Chennai.

I would like to thank **The Director of Public Health, Tamil Nadu & The Deputy Director of Health Services, Tirupattur**, for giving me permission to conduct the study among the population of Tirupattur HUD.

I also wish to thank **Dr. SRIDHAR, M.B.B.S., District Training Team Medical Officer**, Tirupattur HUD for giving block wise population list and his valuable suggestions and help rendered for the study.

I also wish to thank my colleagues and my seniors for their valuable suggestions given throughout the study. I also thank my friends who helped me in data collection.

My grateful thanks to all the participants of the study who patiently answered all my queries, and gave unhesitant consent to be part of the study, without whom this work would not have been possible.

I deeply thank my parents and family members for their moral support and love they have for me. Above all, I thank God for his grace and blessings which helped me to complete this task successfully.

ABBREVIATIONS

BMI	–	Body Mass Index
BP	–	Blood Pressure
CDC	–	Centre for Disease Control and Prevention
CVD	–	Cardio-Vascular Diseases
CAD	–	Coronary Artery Disease
FBS	–	Fasting Blood Sugar
GPAQ	–	Global Physical Activity Questionnaire
HRQOL	–	Health Related Quality of Life
HUD	–	Health Unit District
ICMR	–	Indian Council of Medical Research
NCD	–	Non Communicable Disease
NPCDCS	–	National Programme for Control & Prevention of Cancer, Diabetes, Cardiovascular diseases & Stroke
PPBS	–	Postprandial Blood Sugar
SD	–	Standard Deviation
SES	–	Socio economic status
WHO	–	World Health Organization
WHOQOL	–	World Health Organisation Quality of Life

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ABSTRACT

BACKGROUND

People having more number of chronic diseases tend to lead poorer quality of life and even mild complications of NCDs also have a significant impact on all domains of quality of life. As there is a wide variation in socio demographic factors between rural and urban areas, the health related behaviours and the impact of NCDs on the quality of life also can differ among rural and urban populations.

OBJECTIVES

To compare the Health Related Quality Of Life (HRQOL) and Health related behaviour among people with NCDs in rural & urban Tamil Nadu. To determine the factors influencing the HRQOL among people with NCDs in rural & urban Tamil Nadu.

METHODOLOGY

The study was conducted as a community based cross sectional study in selected areas in Tirupattur (Rural) and Chennai (Urban), Tamil Nadu from January 2015 to August 2015 among 344 people aged 30 years and above with NCDs for at least one year. 169 individuals from rural area and 175 from urban area (after excluding non-respondents) were recruited by multi-stage cluster sampling. A validated semi-structured questionnaire (based on WHO STEPS and WHOQOL-BREF questionnaire) was used to collect data.

RESULTS

The overall mean Health Related Quality of Life among rural people (47.78 ± 9.14) was higher compared to urban people (45.41 ± 9.57). The physical, psychological and social domains of HRQOL are higher in rural people whereas environmental domain of HRQOL is higher in urban people. Urban people had a better control of BMI and blood sugar levels over the past one year when compared to rural people. BP control was somewhat better among rural people compared to urban people. The complication like neuropathy was significantly higher among rural people while co-morbidity like musculoskeletal disorder was more among urban people. Urban population had more number of people with good physical activity than rural population. More number of urban people visited their healthcare provider within a month regularly and took drugs regularly compared to rural people. The predictors of lower HRQOL were urban residence, living seperated, lower educational and socio economic status, complication of neuropathy, low physical activity, salt usage more than 5g per day, consumption of deep fries and tubers and duration of interval of seeking healthcare more than 1 month.

CONCLUSION

Among the people with NCDs, rural people had a better quality of life compared to urban people. Health related behaviours like physical activity and diet patterns, complication like neuropathy and health seeking behaviour have a significant effect on the quality of life. Improvement in health care facilities and health seeking behaviour can enhance the health related quality of life of people with NCDs.

Key words: NCDs, HRQOL

1. INTRODUCTION

Non-Communicable diseases (NCDs), also known as chronic diseases, are of generally slow progression and long duration. According to WHO, the four main types of Non-Communicable diseases are Cardio-vascular diseases (like heart-attacks and stroke), Cancers, Chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma) and Diabetes.[1] The major and most preventable NCDs are Diabetes Mellitus and Cardio-Vascular diseases which include Hypertension, Ischemic Heart Disease and Stroke.

1.1. Socio-Economic Impact of NCDs

Progress towards achieving the post-2015 development agenda and UN Millennium Development Goals are threatened by NCDs. NCDs are closely linked to poverty. The rapid rise in NCDs are predicted to increase household costs associated with health care, thereby impeding poverty reduction initiatives in low-income countries.

Health-care costs for NCDs are so high. It results in quick drain of household resources soon, mainly in low-resource settings, moving families to poverty. NCDs also result in loss of breadwinners, which forces many people into poverty annually, retarding the development. Lower-income groups often cannot afford such products and services.

1.2. Problem Statement

- Non-communicable diseases (NCDs) kill 38 million people each year. Almost 28 million, about three quarters of NCD deaths occurs in low- and middle-income countries.
- Sixteen million NCD deaths occur before the 70 years of age; 82% of these "premature" deaths occurred in low- and middle-income countries.[(1)]
- Cardiovascular diseases account for most deaths due to NCDs (or) 17.5 million people annually, followed by cancers (8.2 million), respiratory diseases (4 million), and diabetes (1.5 million). These four groups of diseases account for 82% of all NCD deaths.[(1)]
- In India, NCD deaths account to 60% of the total deaths. The probability of dying between 30 and 70 years is 26%.[(2)] Annually, out of the total years of life last, nearly 50% are contributed by NCDs.[(3)]
- In 2014 the global prevalence of diabetes was estimated to be around 9% among adults aged 18 years and above.[(4)] In 2012, an estimated 1.5 million deaths were caused by diabetes directly.[(5)] More than 80% of deaths due to diabetes occur in low- and middle-income countries.
- CVDs are the number one cause of death globally; more people die annually due to CVDs than from any other cause.[(4)] In 2012, an estimated 17.5 million people died from CVDs, representing 31% of overall global deaths. Of these deaths, coronary heart disease attributed to an estimated 7.4 million and about 6.7 million were due to stroke.[(5)] Over three quarters of CVD deaths took place in low- and middle-income countries.

1.3. NCDs - Lifestyle Risk Factors

Most of the adult NCDs share a common set of risk factors which are mostly lifestyle associated or attributed to their behaviours. Of the health related behaviours attributing to these NCDs, WHO has prioritized four major risk factors. They are Physical inactivity, Unhealthy diets, Tobacco use and Alcohol use.[1]

- ✓ Tobacco accounts for around 6 million deaths every year (including effects of exposure to second-hand smoke), and is projected to increase to 8 million by 2030.
- ✓ About 3.2 million deaths annually can be attributed to insufficient physical activity.
- ✓ NCDs account to nearly 50% of the 3.3 million annual deaths from harmful drinking.[6]
- ✓ In 2010, 1.7 million annual deaths from cardiovascular causes have been attributed to excess salt/sodium intake.

1.4. NCDs – Metabolic Risk Factors

These health related behaviours lead to metabolic or physiologic changes. WHO has prioritized the following 4 metabolic risk factors: Raised blood pressure, Raised total cholesterol, Elevated glucose & Overweight and obesity.[1] The leading metabolic risk factor globally is attributed to elevated blood pressure (18% of global deaths) followed by overweight and obesity and raised blood glucose.

1.5. Prevention and control of NCDs

An important way to reduce NCDs is to focus on lessening the risk factors associated with these diseases. Low-cost solutions exist to reduce the common modifiable risk factors. Other ways to reduce NCDs are high impact essential NCD interventions that can be delivered through a primary health-care approach to strengthen early detection and timely treatment.

WHO response

The 66th World Health Assembly endorsed the WHO Global Action Plan for the Prevention and Control of NCDs 2013-2020.[7] This plan aims to reduce the number of premature deaths from NCDs to 25% by 2025 through nine voluntary global targets. The nine targets focus in part by addressing factors such as tobacco use, harmful use of alcohol, unhealthy diet and physical inactivity that increase people's risk of developing these diseases.

National Response

Government of India initiated an integrated National Programme for Prevention and Control of Cancers, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS). The programme is being implemented in 100 districts spread over 21 States during 2010-11.[8] The objectives of NPCDCS programme are to prevent and control common NCDs through behaviour and life style changes & early diagnosis and management. [9]

1.6. Impact of NCDs on Quality of Life

These NCDs lead to some common complications affecting mainly kidneys, eyes and nerves. These complications degrade the patient's functional ability and well-being. Some complications are so worse that their daily routine activities and their occupational activities are affected. It doesn't affect only the physical ability of the patients but also their social and mental dimension of health. Functional activities and well-being of these patients with chronic diseases cannot be assessed by objective measures of health alone. Self-assessed health status proved to be more useful predictor of mortality and morbidity than many objective measures of health.[10]

HRQOL measures demonstrate scientifically the impact of health on quality of life, going well beyond the old paradigm that was limited to what can be seen under a microscope. HRQOL questions about perceived physical and mental health and function have become an important component of health surveillance and are generally considered valid indicators of service needs and intervention outcomes.[11]

1.7. HRQOL – Health Related Quality of Life

WHO defines "Quality of Life is an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is

a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment." [4]

CDC has defined HRQOL as "an individual's or group's perceived physical and mental health over time. On the individual level, HRQOL includes physical and mental health perceptions and their correlates - including health risks and conditions, functional status, social support, and socioeconomic status. On the community level, HRQOL includes resources, conditions, policies, and practices that influence a population's health perceptions and functional status." [13]

Changes in frequency and severity of diseases doesn't alone measure health and effects of health care but the estimation of well-being can be done by measuring the improvement in the health related quality of life. The apparent difference between one's expectations and one's actual physical, emotional, and social functioning is Health Related Quality of Life (HRQOL).

The construct and measuring of HRQOL can be useful for the following purposes.

- ✓ Estimate the burden of preventable disease, injuries, and disabilities and provide valuable new insights into the relationships between HRQOL and risk factors.

- ✓ Monitor progress in achieving the nation's health objectives.
- ✓ HRQOL surveillance data can be analysed to identify subgroups with relatively poor perceived health and help to implement interventions to improve their situations and avoid more serious consequences.
- ✓ Interpretation and publication of these data can help judge the needs for health policies and legislation, guide the development of strategic plans, allocate resources based on unmet needs and monitor the effectiveness of broad community interventions.
- ✓ Enables health agencies to legitimately address broader areas of healthy public policy around a common theme in collaboration with a wider circle of health partners, including social service agencies, community planners, and business groups.[14]
- ✓ Focusing on HRQOL as a national health standard can bridge boundaries between disciplines and between mental, social and medical services.

Studies have shown that there is clear association with Non communicable or chronic diseases and worsening of health related quality of life. Measuring the health related quality of life has many advantage over conventional disease specific measures. The measures of quality of life are useful in assessing patients having different conditions by plying as a common tool.[15]

People having more number of chronic diseases tend to lead poorer quality of life and each chronic disease has impact on one or other components of health related quality of life.[16] People having even mild

complications of NCDs also have a significant impact on all domains of quality of life. Appropriate management like regular follow-up, early diagnosis and treatment of acute worsening conditions and co-morbid conditions, not only prevents the emergence of complications but also improves the quality of life. [17]

The prevalence of each NCD differs between rural and urban areas. Certain chronic diseases has more prevalence in rural areas while some NCDs are more prevalent in urban areas. There is a wide variation in socio demographic factors between rural and urban areas which also have a significant effect on the health related behaviours and health related quality of life. The health related behaviours also have a direct effect on quality of life.

2. AIM AND OBJECTIVES

2.1. AIM

To assess the Health Related Quality Of Life (HRQOL) among people with NCDs in rural & urban Tamil Nadu.

2.2. OBJECTIVES

A. PRIMARY

To compare the Health Related Quality Of Life (HRQOL) among people with NCDs in rural & urban Tamil Nadu.

B. SECONDARY

1. To compare the Health related behaviour among people with NCDs in rural & urban Tamil Nadu
2. To determine the factors influencing the HRQOL among people with NCDs in rural & urban Tamil Nadu

3. REVIEW OF LITERATURE

3.1. Prevalence of NCDs in Tamil Nadu - Rural and Urban differences

A Non Communicable Disease risk factors survey was conducted by ICMR (2007- 08) [18] which aimed to establish the baseline database of NCD risk factors needed to monitor trends in population health behaviour and risk factors for chronic diseases over time. The study results states 14% had stage I hypertension, 4% had stage II hypertension and with an enormous 44% of pre hypertensives. Hypertension was more pronounced among males (21%) compared to females (15%). Among the diagnosed hypertensives, urban population had 6% and rural population had 3%. Around 3% of the people had history of diabetes of which urban had 4% and rural had 2%. In the total study population, there were more number of females with diabetes compared to males.

A study by Sadikot SM et al (2004),[19] "The burden of diabetes and impaired glucose tolerance in India using the WHO 1999 criteria: prevalence of diabetes in India study (PODIS)", states that the prevalence of Diabetes Mellitus in the India was 4.3% of which urban and rural populations had 5.9% and 2.7%, respectively.

A systematic review by Rao M et al (2015),[20] "Prevalence, treatments and outcomes of coronary artery disease in Indians: A systematic review" reviewed studies in Indians with CAD from Jan 1969 to Oct 2012. The

study results states that the prevalence of CAD in urban areas ranged from 2.5%-12.6% and in rural areas, 1.4%-4.6%. The prevalence of hypertension ranged from 13.1-36.9% and diabetes mellitus was 0.2-24.0%.

A study by Anjana RM et al (2015),[21] "Incidence of Diabetes and Pre-diabetes and Predictors of Progression Among Asian Indians: 10-Year Follow-up of the Chennai Urban Rural Epidemiology Study (CURES)", collected data on 1376 individuals followed up for a median of 9.1 years. It states that the incidence rate of diabetes was 33.1 per 1,000 person-years (29.9–36.5) and the incidence of pre-diabetes was 29.5 per 1,000 person-years (26.1–33.1) and the incidence of "any dysglycemia" was 51.7 per 1,000 person-years (47.3–56.4).

A study by Binu VS et al (2012),[22] "Prevalence and risk factors for hypertension in a rural area of Tamil Nadu, South India" showed that the prevalence of hypertension among adults was found to be 19.1% of which males was around 19.6% and females was 18.5%. Age specific prevalence of hypertension was maximum (40%) among adults above 60 years of age.

3.2. Health Related Behaviours in people with NCDs.

As per the NCD risk factors survey done by ICMR (2007- 08),[18] 27% of the males were current smokers; about 11% were current users of smokeless tobacco. About 15% reported to have consumed alcohol in past 12 months and 6% of the males were past drinkers; less than 5% of the

current drinkers had high drinking. Only 1% of the population consumed five or more servings of fruits and vegetables per day. Regarding physical activity, 66% of the people had low physical activity, 30% had moderate and 4% had high level of activity.

As per "Health-related behaviours of people with diabetes and those with cardio-metabolic risk factors: results from SHIELD" study by Green et al (2007) in US population,[23] only 12.7% of the people with diabetes and 14.9% of high risk for diabetes had been undergoing regular physical activity. 33% of the diabetics and 27% of the high risk for diabetes people maintained desired weight for more than 6 months. 78% of the diabetics tried to make healthier food choices but only 32% followed a prescribed eating plan.

3.3. Rural and Urban differences in Health Related Behaviours

As per the NCD risk factors survey done by ICMR (2007- 08),[18] urban population had 25% and rural population had 29% of current smokers. While taking into account of alcohol consumers, urban population had 18% and rural had 23%. The mean number of days of fruit consumption was somewhat higher among urban people (3 days) compared to rural people (2 days). Considering low physical activity, urban had 70% and rural had 60%.

3.4. Impact of NCDs on HRQOL

"Functional status and well-being of patients with chronic conditions. Results from the Medical Outcomes Study" by Stewart et al (1989),[24] states that patients with chronic conditions showed markedly worse physical and social functioning; mental health and health perceptions compared to people without chronic conditions. Hypertension had the least impact and people with heart diseases had the greatest impact.

A study by Thommassen et al (2006),[25] "Impact of chronic disease on quality of life in the Bella Coola Valley" was done to assess health-related quality of life parameters in adults suffering from chronic disease and living in the rural, remote community of Bella Coola using MOS 36-item Short Form Health Survey (SF-36). The presence of chronic disease is associated with significant differences in HRQOL and the greater the number chronic diseases present the worse the HRQOL. People with diabetes had a significant lower HRQOL compared to non-diabetics in all domains except mental health. People with hypertension had a significant lower HRQOL compared to non-hypertensives in all domains except mental health and social functioning.

A study by Sazlina et al (2012),[26] "Predictors of health related quality of life in older people with non-communicable diseases attending three primary care clinics in Malaysia" was done among registered patients aged 55 years and above who attended three public primary care clinics in a

district in Selangor, Malaysia between December 2007 and April 2008. The results of the study showed that older people with NCDs were susceptible to lower health related quality of life. People with more than one NCDs had a lower HRQOL compared to persons with one NCD. Living single, presence of co morbid conditions, increasing old age and poorer social support were predictors of lower physical component of HRQOL. Indian ethnicity, older women and poorer social support were predictors of lower mental health component of HRQOL.

A study by Nalin Kumar et al (2014),[27] "Physical Inactivity as a factor affecting Quality of Life (QOL) in people with Non Communicable Diseases (NCD): A descriptive cross - sectional assessment" was conducted among 365 patients with NCDs in the Dhanbad district situated in Jharkand.192 were recruited from household survey and 173 patients from the hospital. Data collection was done using 2 sets of standard questionnaire (GPAQ and WHOQOL). 72% of the people with NCDs remain physically inactive which is a mediator for lower HRQOL among people with NCDs.

A study by Vishaka Jain et al (2014),[28] "Health-Related Quality of Life (HRQOL) in Patients with Type 2 Diabetes Mellitus" was carried out as a case control study among type 2 diabetes patients attending medicine outpatient department of a rural medical college hospital between May and July 2012 and age and sex matched controls were selected from the hospital and community. The results of the study states that the HRQOL among

diabetics and non-diabetic controls is comparable to each other with bad physical health, bad psychological health, deteriorating social relationships, and bad environmental conditions affecting the HRQOL of both the groups equally. The overall HRQOL of the total study population (cases and controls) was poor. Diabetes and its complications affected negatively all of the domains of the WHOQOL-BREF; however, the effects were strongest for the physical health and psychological domains and weaker for the social relationships and environment domains. The diabetic females had a lower HRQOL compared to diabetic males.

A study by Eljedi et al (2006),[29] "Health-related quality of life in diabetic patients and controls without diabetes in refugee camps in the Gaza strip: a cross-sectional study" aimed at recruiting about 200 patients with diabetes and 200 controls without diabetes living in the camps in the Gaza strip. Data were collected from November 2003 to December 2004. All domains were strongly reduced in diabetic patients as compared to controls, with stronger effects in physical health (36.7 vs. 75.9 points of the 0–100 score) and psychological domains (34.8 vs. 70.0) and weaker effects in social relationships (52.4 vs. 71.4) and environment domains (23.4 vs. 36.2). The impact of diabetes on HRQOL was especially severe among females and older subjects (above 50 years). Low socioeconomic status had a strong negative impact on HRQOL in the younger age group (<50 years).

A study by Ninh Thi Ha et al (2014),[30] "Quality of life among people living with hypertension in a rural Vietnam community" was conducted in a rural community in Vietnam. Face-to-face interviews were conducted among 275 hypertensive people aged 50 years and above using WHOQOL-BREF questionnaire. The QOL among hypertensive patients was found moderate in all domains, except for psychological domain that was fairly low (mean = 49.4). Being men, married, attainment of higher education, having physical activities at moderate level, and adherence to treatment were positively associated with QOL. However, older age and presence of co-morbidity were negatively associated with QOL.

A study by Ganesh Kumar et al (2014),[31] "Quality of Life and its associated factors using WHOQOL-BREF among elderly in urban Puducherry" was conducted as a community based cross-sectional study among 300 elderly subjects in urban Puducherry, India. World Health Organization Quality of Life BREF (WHOQOL-BREF) and Activities of Daily Living (ADLs) by Katz ADL scale was used. Overall HRQOL score was 49.74 ± 10.21. Lower HRQOL was associated with no schooling, nuclear family, living, having musculoskeletal disorder and low vision.

3.5. Rural and Urban differences in HRQOL

A study by Abhay Mudey et al (2011),[32] "Assessment of Quality of Life among Rural and Urban Elderly Population of Wardha District, Maharashtra, India" was carried out to assess the difference of quality of

life between urban and rural elderly population and to determine the association between the socio-demographic profile and health related quality of life among elderly population. The cross sectional study was conducted in the community on 800 elderly subjects of 60 years and above selected from urban (n= 400) and rural (n= 400) parts of Wardha district using multistage simple random technique. The WHO-QOL BREF questionnaire was used to assess the quality of life.

The above study showed the following results. Urban elderly population showed significant lower level of quality of life in the physical and psychological domains of HRQOL than the rural elderly population. The rural elderly population showed significant lower HRQOL in social and environmental domains than urban population.

The Quality of Life decreases in physical and psychological domain as the age increases in the rural population but no difference found in urban population. The HRQOL scores for psychological domain amongst married elderly population was higher than widowed or single elderly people, and was found to be significant statistically. The literate elderly people in rural area had a better QOL as compared to illiterate people, which was significant statistically for physical and psychological domains.

The difference between the quality of life in urban and rural elderly population was due to the difference in the socio-demographic factors, lifestyle behaviours, social resource and income adequacy.

4. METHODOLOGY

4.1. Study Design:

The study was conducted as a community based cross sectional study comparing the health related behaviours and quality of life among people with non-communicable diseases in rural and urban parts of Tamil Nadu.

4.2. Study Place:

The study was conducted in selected areas in Tirupattur Health Unit District (Rural) and Chennai Corporation (Urban), Tamil Nadu.

4.3. Study Duration:

The study was carried out from January 2015 to August 2015**.** The period of field study was from Apr 2015 to Jun 2015.

4.4. Study Population:

The study population comprised of people with non-communicable diseases residing in the selected areas of Tirupattur and Chennai.

A. Inclusion Criteria:

1. People aged above 30 years irrespective of sex
2. Those who have evidence of suffering from anyone NCD for at least one year. (eg. health records)

B. Exclusion Criteria:

1. Those who have life threatening illness or bed-ridden
2. Those who are included in the pilot study

4.5. Sample Size:

Calculated sample size: 360 individuals

Sample size covered: 373 individuals

Sample size is calculated using the formula:

$$\frac{(Z_\alpha + Z_\beta)^2 * 2 * \sigma^2}{d^2}$$

Where, Z_α = two tailed deviate for 95% confidence level = 1.96,

Z_β = two tailed deviate for 80% power of the study = 0.84

σ = standard deviation of HRQOL scores of the total population

d = difference in mean HRQOL scores between two populations

The mean HRQOL scores and the standard deviation of the scores for rural and urban areas used here for sample size calculation are taken from the results of a pilot study conducted in a selected area in Tirupattur and Chennai. A sample of 30 participants were selected from both rural and urban area accounting for totally 60 participants.

Table.1. Overall HRQOL scores of rural and urban areas in pilot study

OVERALL HRQOL	MEAN	S.D.
RURAL	46.95	9.6
URBAN	43.09	8.34

Difference in means of QOL scores, d = 3.86

Standard Deviation of QOL scores, $\sigma = 8.97$

$$\text{Sample size, } N = (1.96 + 0.84)^2 * 2 * 8.97^2 / (3.86)^2$$

$$= 84.67$$

$$\sim 84$$

Applying a design effect of 2 for cluster sampling,

$$N = 84 * 2 = 168$$

Allowing a minimal non-response rate, N = 180

The sample size comes around 180 in each arm.

Total sample size of 360 people with NCDs are selected;

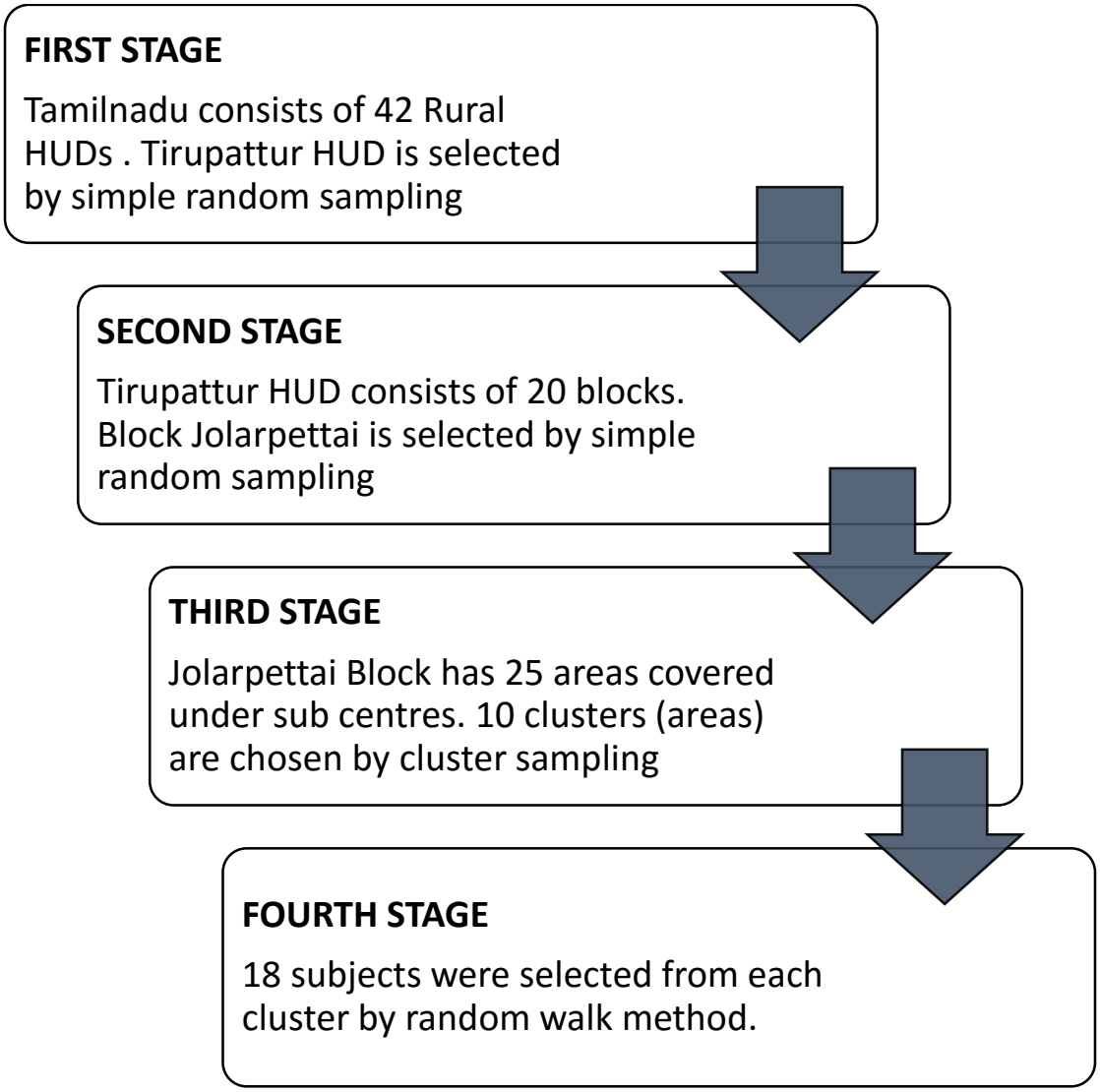
180 people from rural & 180 from urban area

4.6. Sampling Method:

The sampling for the study population was carried out as Multi stage sampling method. The first stage involved selecting a block or zone from the Tirupattur HUD (rural) and Chennai Corporation (urban) respectively. The second stage employed a cluster sampling which involved selecting clusters (areas) from the block or zone. The third stage involved selecting individuals from the selected clusters.

SAMPLING STEPS IN RURAL POPULATION OF TAMILNADU

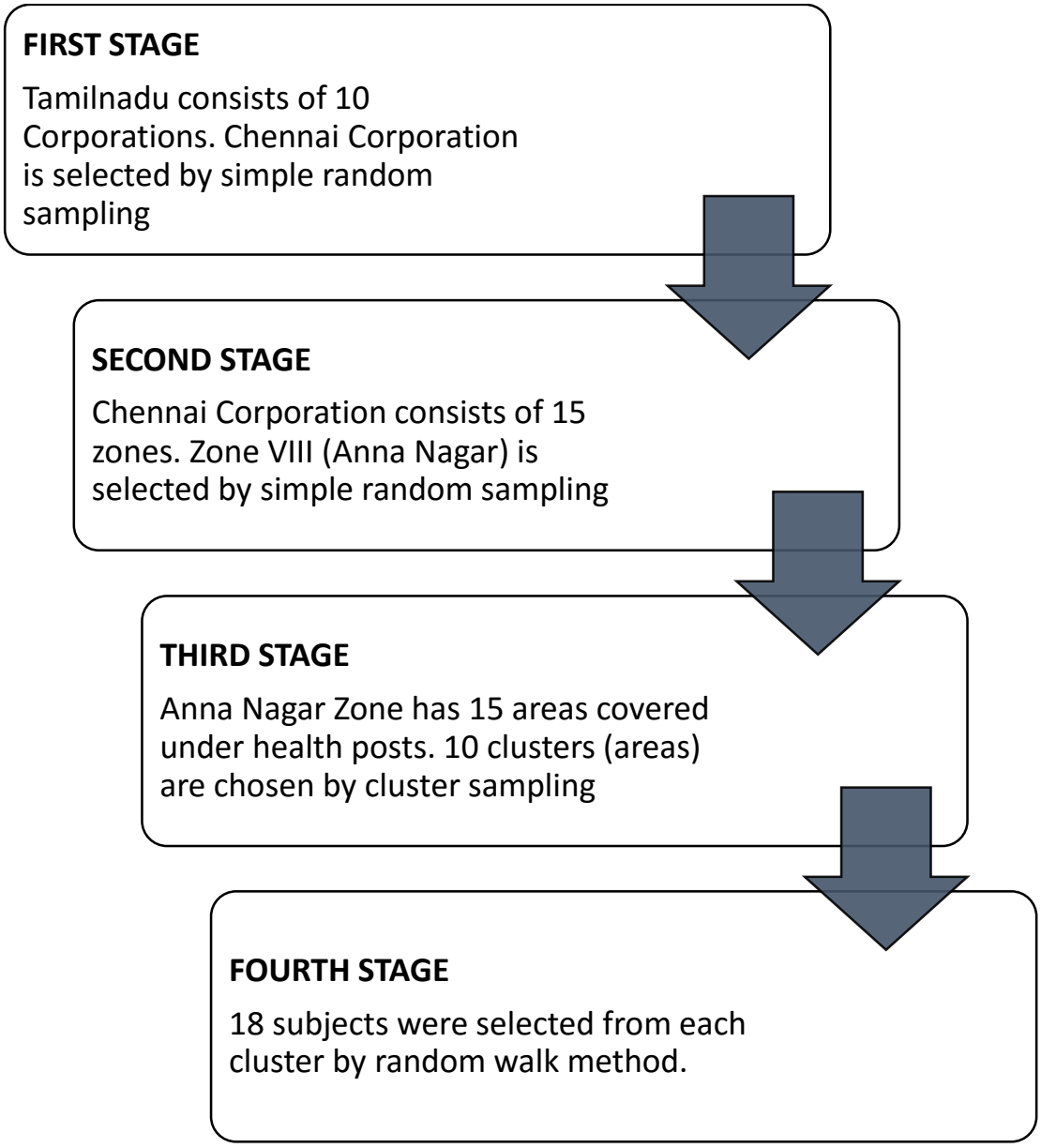
Fig.1. Steps in multi stage sampling in rural population of Tamil Nadu



A starting point was selected randomly in the cluster (area) and using right hand rule, adjacent houses were recruited till 18 subjects were reached.

SAMPLING STEPS IN URBAN POPULATION OF TAMILNADU

Fig.2. Steps in multi stage sampling in urban population of Tamil Nadu



A starting point was selected randomly in the cluster (area) and using right hand rule, adjacent houses were recruited till 18 subjects were reached.

Method of choosing clusters:

Table.2. Cluster sampling method in rural area

CRITERIA	RURAL
NUMBER OF CLUSTERS TO BE SAMPLED	10
INDIVIDUALS WITHIN EACH CLUSTER	18
CUMULATIVE POPULATION	183844
CLUSTER INTERVAL	18385
RANDOM NUMBER	1435

Table.3. Cluster sampling method in urban area

CRITERIA	URBAN
NUMBER OF CLUSTERS TO BE SAMPLED	10
INDIVIDUALS WITHIN EACH CLUSTER	18
CUMULATIVE POPULATION	760676
CLUSTER INTERVAL	76068
RANDOM NUMBER	39263

The cumulative population which had the random number was chosen as 1st cluster and subsequent clusters were selected by adding cluster interval to the random number and so on till the required number of clusters were obtained.[33] (Annexure)

4.7. Study Tool:

The study was conducted as one to one interview with a validated, semi-structured questionnaire.

Questionnaire: The questionnaire for the present study contained 5 parts:

A. Socio-Demographic particulars of the individuals and their family

It included the name, age, sex, residence, religion, marital status, educational status, occupation, type of family, income of the family and total number of family members.

B. Anthropometry & Clinical Parameters of the subject.

It included the individual's weight, height, blood pressure, fasting and post-prandial blood glucose levels at present and 12 months back.

C. NCD profile of the subject.

It includes the details of presence of NCDs (Diabetes, Hypertension, Coronary Heart Disease and Stroke), its duration and presence of complications and co-morbidities.

D. Health Related Behaviours of the subject.

This part contains questions on knowledge, attitude and practice of lifestyle risk factors for NCDs (Physical inactivity, Diet, Smoking and Hypertension) and Health seeking behaviour. The questions of this part was developed based on the WHO STEPS questionnaire[34] for chronic disease risk factor surveillance. The questionnaire was modified according to the

local culture and validated with the help of expert and pilot study. It was translated to Tamil and back translated to English to ensure that the meaning of the message conveyed didn't vary.

E. Health Related Quality of Life of the individual.

This part of the questionnaire contained the questions from the WHOQOL – BREF questionnaire 2004 by WHO[12] without any modification. This questionnaire was developed with 15 international field centres to obtain an assessment tool that is applicable cross-culturally. It contained 26 questions with 2 questions on overall quality of life and health, 7 questions on physical domain, 6 questions on psychological domain, 3 questions on social domain and 8 questions on environmental domain of quality of life. The original questionnaire was pre-validated and available in both English and Tamil versions. The questionnaire was used only after submitting a signed user agreement to the Director of Health Statistics, WHO, Geneva.

4.8. Data Collection and Methods:

a. Data collection was done in the study area after obtaining prior permission from the Director, Institute of Community Medicine and The Dean, Madras Medical College and approval of Institute Ethical Committee. (Annexure)
b. Data collection was done in the rural area, Tirupattur HUD after obtaining prior permission from The Director of Public Health, Tamil Nadu (Annexure)

c. Data collection was done in the urban area, Chennai Corporation after obtaining prior permission from The Deputy Commissioner, Corporation of Chennai. (Annexure)

d. Prior to the main study, a pilot study was carried out among 60 individuals totally, 30 from rural and 30 from urban area. The pilot study was conducted in a similar area where the main study was conducted. These individuals were not included in the main study. The data was collected by interviewing these 60 individuals using the questionnaire. Necessary modifications were made in the questionnaire after its validation. The mean HRQOL scores obtained in the pilot study were used for the calculation of the sample size for the main study.

e. For the main study, data was collected from the individuals by house-to-house visit in the study area. The members who were not available during the visit and people without NCD were excluded from the study. When the house was locked during the visit, the next house was taken for the study. The details collected about the disease profile of the people were cross checked from the records available at the nearest health care centres.

f. Each participant was given a brief introduction about the study and informed consent was obtained from all participants.

g. Relevant information was obtained from the respondent using the Tamil version of the questionnaire at their homes. Questions were read out to the study subjects in exactly the same order as listed in the questionnaire and sufficient time was given to the subjects to respond. If the study subject

haven’t understood the question, the question was repeated in the same manner without probing for the answer.

h. The anthropometry and clinical parameters of the individuals were obtained from their health records based on the availability. The intention of collecting these parameters was not to know the current health status of the individual whereas to measure the change in these metabolic risk factors in the past one year. The present status of these parameters were obtained from their health records dated within past 30 days and 12 months back status of parameters were obtained from their health records dated 12 months back and not exceeding 18 months.

4.9. Services rendered:

Participants’ health status was assessed and given advice on his medical treatment. Health education about the lifestyle risk factors and lifestyle modifications was provided to the individuals and also to their family members. Advice about the duration of interval of seeking health care provider and the metabolic risk factors to be monitored periodically are also given to the individuals and family members.

5. DATA ENTRY & ANALYSIS

5.1. Data Entry

The data collected from the questionnaires were entered in Microsoft Excel 2013 version and the master chart was framed. The data entered were double checked for any errors. The data from the master chart were exported to Statistical Package for Software Solutions (SPSS) version 21 for analysis. Totally data was collected from 373 people. After checking for non- response and erroneous data, 29 individuals' data were removed from the study accounting to a total of 344 people with 169 from rural and 175 from urban population.

5.2. Data Analysis

Continuous variables were presented in the form of descriptive statistics (mean and standard deviation) and categorical variables in the form of frequency distributions and percentages. Association between categorical variables are tested using Chi square tests and Fisher exact tests. Association between continuous variables and a grouping variable were tested using student 't' test and ANOVA (since the data was normally distributed). Multiple linear regression was performed to elucidate the predictors of the dependant continuous variable.

5.3. Data presentation

The distribution of categorical data in the total study & among rural and urban population were represented by tables and bar charts. The continuous variables distribution were depicted by tables, box plot and error bar chart. The distribution of continuous variables along a grouping variable with a linear trend are represented by line diagrams.

5.3. Variables of interest & Operational definitions

I. Socio demographic variables

a. **Age:** Completed age at the time of interview was considered for the study
b. **Unskilled worker:** As per Minimum Wages Act, Un-skilled employee is "one who possess no special training and whose work involves the performance of the simple manual tasks, which may be quickly learned and has no identifiable skill."
c. **Skilled worker**: As per Minimum wages act, skilled employee is "one who is capable of working independently, efficiently and accurately. An individual who is knowledgeable about a specific skill or trade."
d. **Socio-Economic Status:** The socio-economic status was classified based on Modified B.G. Prasad Classification, 2015.[35]

II. Anthropometry and Clinical Parameters

a. **BMI:** Body Mass Index is defined as a person's weight in kilograms divided by the square of height in meters (kg/m^2). According to the BMI, the individuals are classified into various categories of obesity. Those

individuals whose BMI is within 18.5 to 24.99 are considered as normal.[36]

b. **BP (Blood Pressure):** Based on the systolic and diastolic blood pressure of the individuals, they are classified as normal, pre hypertensive and hypertensive according to JNC criteria VIII. Those individuals whose systolic BP is less than 140 mm Hg and diastolic BP is less than 90 mm Hg are considered as normal. [37]

c. **MAP (Mean Arterial Pressure):** MAP is the average arterial pressure during each cardiac cycle and is calculated by sum of diastolic pressure and one third of pulse pressure. Pulse pressure is the difference between systolic and diastolic pressure.

d. **FBS (Fasting Blood Sugar) & PPBS (Post-prandial Blood Sugar):** Those individuals whose FBS is less than 126 g/dl and PPBS less than 199 g/dl are normal.[36]

   For the purpose of analysis of control of metabolic risk factors over the past one year, they have been classified into three groups of control.

e. **Under Control:** Those individuals whose anthropometry and clinical parametric values at present and 12 months back are within normal limits.

f. **Good Control:** Those individuals whose values 12 months back were abnormal and values at present were within normal limits are classified as Good Control.

g. **Poor Control:** Those individuals whose values 12 months back were within normal limits or abnormal and values at present were abnormal are classified as Poor Control.

III. NCD Profile

a. **NCD (Non-Communicable Disease):** Non-Communicable Diseases taken into account in the present study are Diabetes, Hypertension, Coronary Heart Disease and Stroke.

b. **Complications:** Complications and co-morbidities taken into account in the present study are Retinopathy, Nephropathy, Neuropathy, Musculoskeletal Disorders and Asthma.

IV. Health Related Behaviours

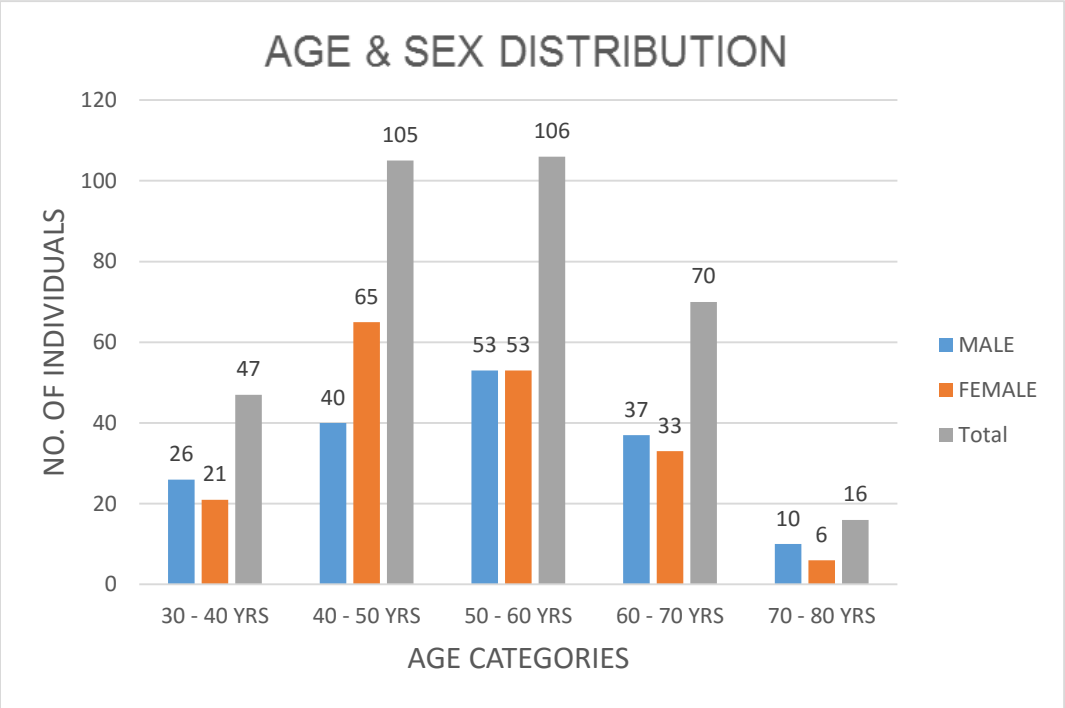
- ✓ Physical inactivity is defined as less than 150 minutes of moderate intensity activity per week or 30 minutes brisk walking per day for at least 5 days a week or equivalent. [36]
- ✓ Health Diet should contain at least 400 g or 5 servings of fruits and vegetables per day, salt intake should be less than 5 g (approximately 2 g of sodium) per day per person, fat intake less than 30% of the total calories intake, out of which saturated fatty acids should be less than 10%.[36]
- ✓ Tobacco use is confined to those persons currently consuming tobacco products in any form. [36]
- ✓ Alcohol use is attributed to persons with heavy alcohol drinking regularly which leads to detrimental health effects.[36]

6. RESULTS

I. DISTRIBUTION OF DATA OF STUDY POPULATION

The study population consisted of totally 344 people, out of which 169 belonged to rural and 175 belonged to urban area.

Fig.3. Age and Sex distribution of the participants

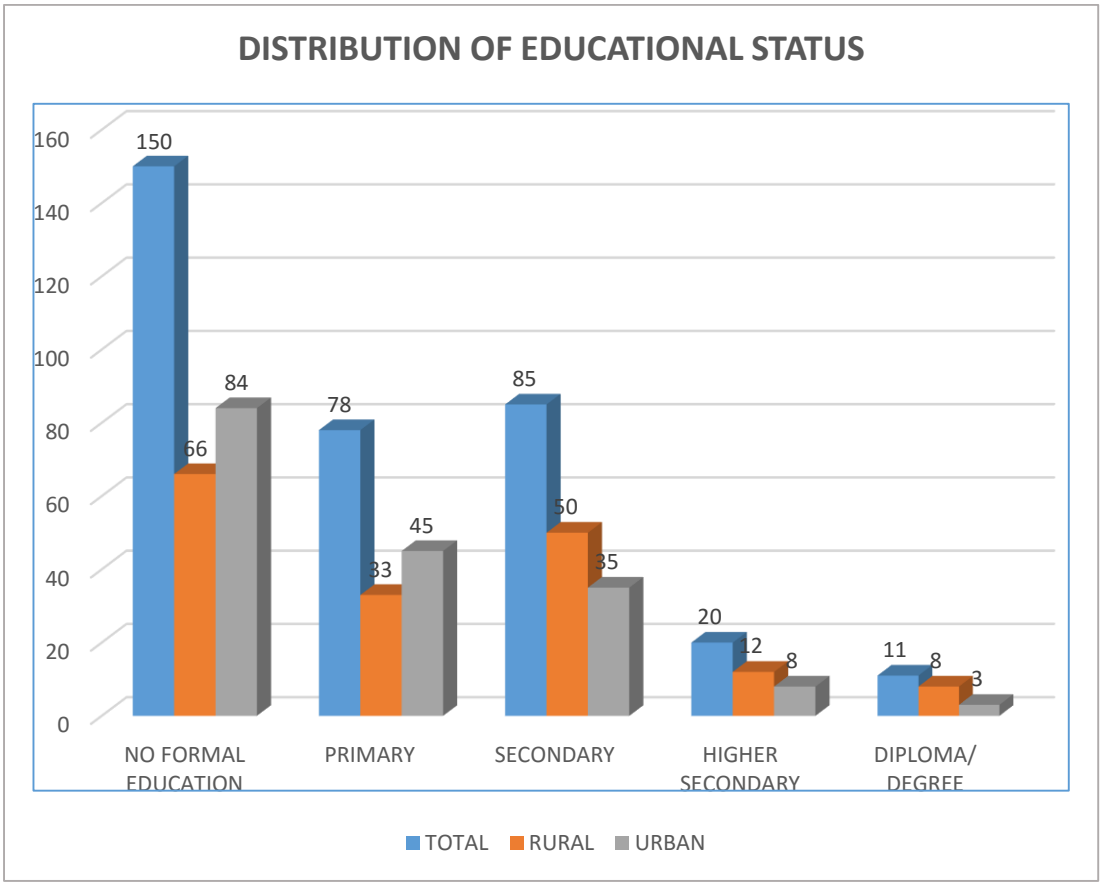


Among the study population, the minimum age was 30 years and maximum was 76 years with a Mean Age (± S.D.) of 51.03 (± 10.39) years. There were totally 166 males and 178 females in the study population

Table.4. Demography of the study population

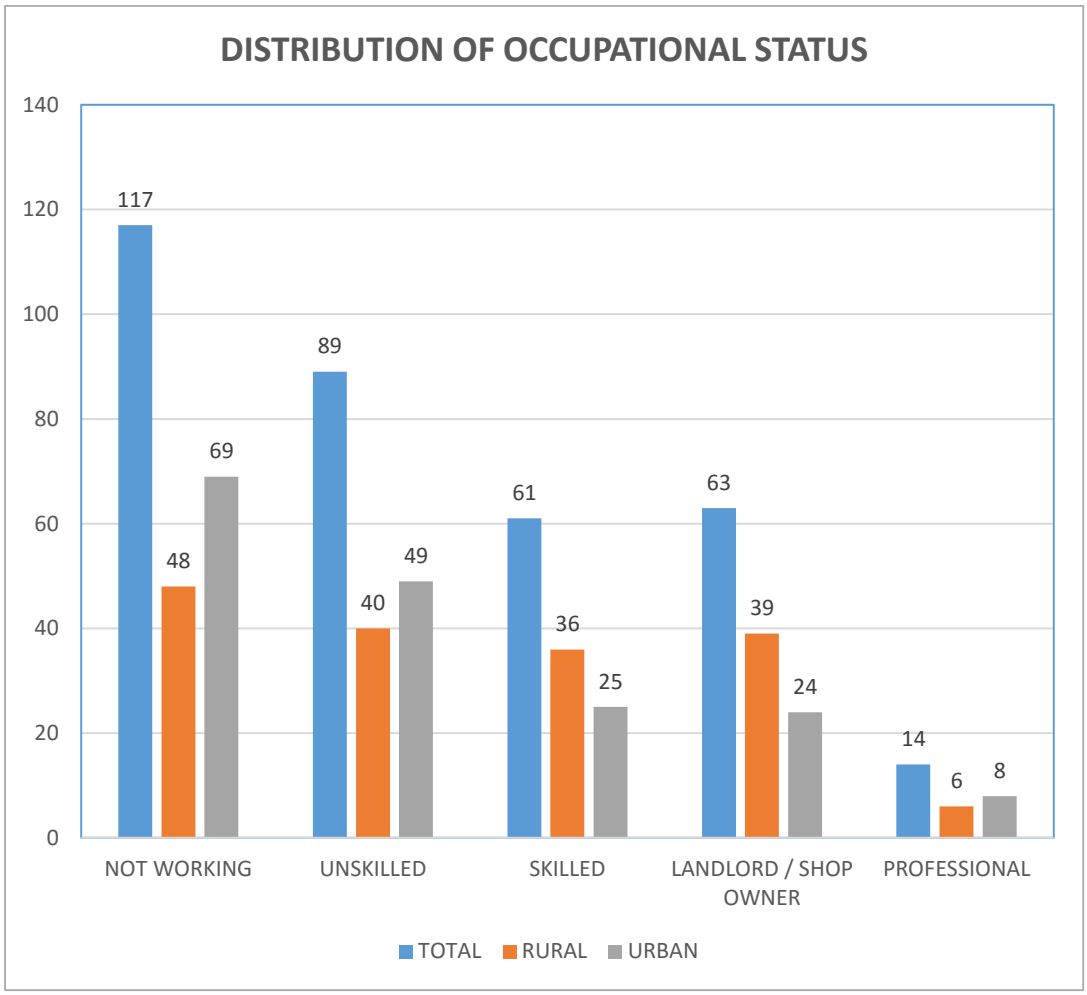
CRITERIA	TOTAL (N = 344)	RURAL (N = 169)	URBAN (N = 175)
AGE CATEGORIES			
30 - 40 YRS	47 (13.7%)	27 (15.97%)	20 (11.42%)
40 - 50 YRS	105 (30.5%)	42 (24.85%)	63 (36%)
50 - 60 YRS	106 (30.8%)	58 (34.31%)	48 (27.42%)
60 - 70 YRS	70 (20.3%)	34 (20.11%)	36 (20.57%)
70 - 80 YRS	16 (4.7%)	8 (4.73%)	8 (4.57%)
SEX			
MALE	166 (48.3%)	88 (52.07%)	78 (44.57%)
FEMALE	178 (51.7%)	81 (47.92%)	97 (55.42%)
RELIGION			
HINDU	292 (84.9%)	151 (89.34%)	141 (80.57%)
MUSLIM	39 (11.3%)	12 (7.1%)	27 (15.42%)
CHRISTIAN	13 (3.8%)	6 (3.55%)	7 (4%)
MARITAL STATUS			
UNMARRIED	8 (2.3%)	4 (2.36%)	4 (2.28%)
MARRIED	324 (94.2%)	157 (92.89%)	167 (95.42%)
SEPERATED/DIVORCED	12 (3.5%)	8 (4.73%)	4 (2.28%)
FAMILY TYPE			
SINGLE	21 (6.1%)	10 (5.91%)	11 (6.28%)
NUCLEAR	229 (66.6%)	111 (65.68%)	118 (67.42%)
JOINT / EXTENDED	94 (27.3%)	48 (28.4%)	46 (26.28%)

Fig.4. Distribution of educational status among the study population and their rural and urban differences



The people with lower forms of education were more prevalent among urban population and people with higher level of education were more found in rural population. The difference in the distribution of educational status among rural and urban population was statistically significant. (χ^2 test, p = 0.047)

Fig.5. Distribution of Occupational Status among the study population and their rural and urban differences



The urban population had more number of people who are not working and unskilled labourers whereas rural population had more number of skilled labourers. The difference in the distribution of occupational status among rural and urban population was statistically significant. (χ^2 test, p = 0.034)

Table.5. Distribution of Socio-Economic Status among the study population and their rural and urban differences

SOCIO ECONOMIC CLASS	TOTAL (N = 344)	RURAL (N = 169)	URBAN (N = 175)
LOWER CLASS	70 (41.42%)	97 (55.42%)	167 (48.54%)
LOWER MIDDLE	66 (39.05%)	57 (32.57%)	123 (35.75%)
MIDDLE CLASS	20 (11.83%)	13 (7.42%)	33 (9.59%)
UPPER MIDDLE	8 (4.73%)	8 (4.57%)	16 (4.65%)
UPPER CLASS	5 (2.95%)	0 (0%)	5 (1.45%)

Majority of the participants belonged to Lower socio economic class (48.5%) and Lower Middle Class (35.8%). (Classified according to revised BG Prasad scale). Among the lower class people, urban population had a more representation than rural whereas in other classes, rural people were more. The difference in socio economic class distribution among rural and urban population was statistically significant (Fisher exact p = 0.001)

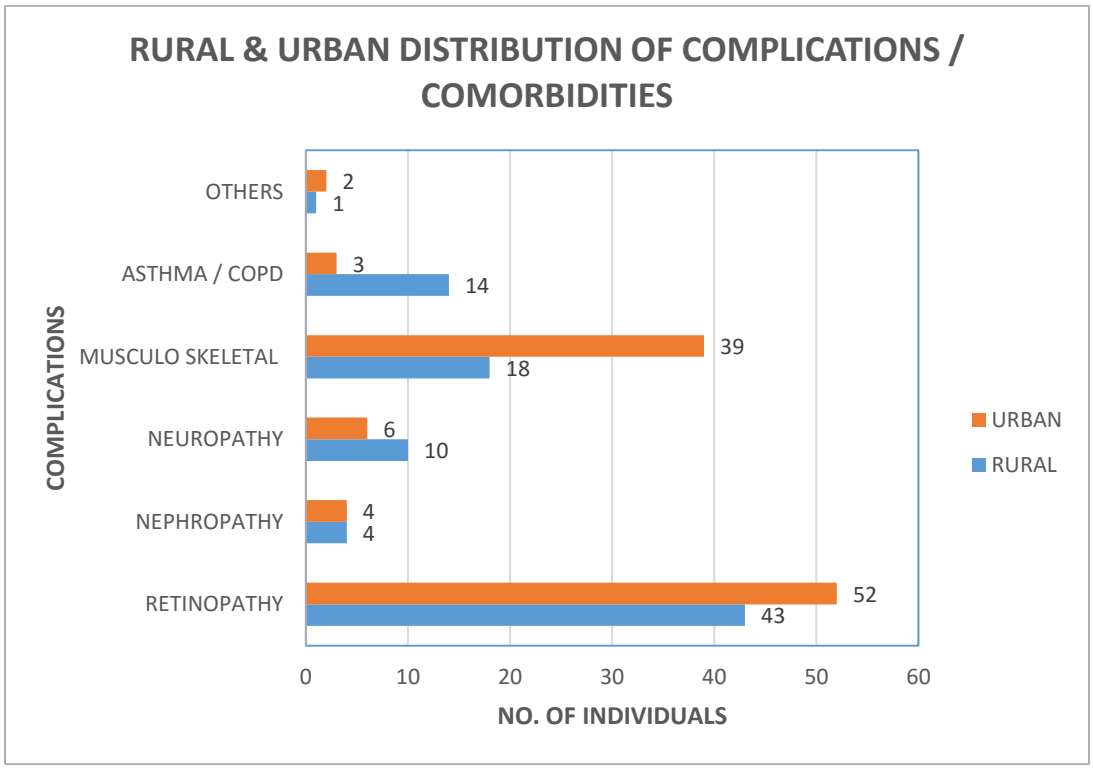
II. NCD PROFILE OF THE STUDY POPUATION

Table.6. NCD profile of the study population and their rural and urban differences.

DISEASE	TOTAL (N = 344)	RURAL (N = 169)	URBAN (N = 175)
DIABETES	188 (54.7%)	104 (61.53%)	84 (48%)
HYPERTENSION	251 (73%)	113 (66.86%)	138 (78.85%)
CAD	10 (2.9%)	6 (3.55%)	4 (2.28%)
STROKE	2 (0.6%)	1 (0.59%)	1 (0.57%)
COMPLICATIONS	181 (52.6%)	80 (47.33%)	101 (57.71%)

More number of people had hypertension (73%) compared to diabetes (54%) with less than 2% suffered from CAD and Stroke. The rural people had more number of people with diabetes (61.5%) and the urban people had more number of people with hypertension (78.8%). The difference in distribution of people with Diabetes (χ^2 test, p = 0.012) and Hypertension (χ^2 test, p = 0.012) among rural and urban people were statistically significant. More number of urban people had complications compared to rural people but the difference was not statistically significant.

Fig.6. Distribution of Complications & Co-morbidities among the study population and their rural and urban differences



The complication like retinopathy was more in urban people whereas neuropathy was more in rural people. But these differences were not statistically significant. Co-morbidities like Musculoskeletal disorders were more prevalent in urban people and respiratory disorders were more prevalent in rural people. These differences were statistically significant. (musculo-skeletal, χ^2 test, $p = 0.004$, respiratory, χ^2 test, $p = 0.005$)

Table.7. Distribution of number of NCDs and Complications among the study population and their rural and urban differences.

CRITERIA	TOTAL (N = 344)	RURAL (N = 169)	URBAN (N = 175)
NO. OF NCDs			
ONE	246 (71.5%)	121 (71.6%)	125 (71.4%)
TWO	90 (26.2%)	42 (24.9%)	48 (27.4%)
THREE	8 (2.3%)	6 (3.6%)	2 (1.1%)
DURATION OF NCDS			
1 YEAR	168 (48.8%)	87 (51.5%)	81 (46.3%)
2 YEARS	103 (29.9%)	50 (29.6%)	53 (30.3%)
3 YEARS	34 (9.9%)	13 (7.7%)	21 (12%)
>3 YEARS	39 (11.3%)	19 (11.2%)	20 (11.4%)
NO. OF COMPLICATIONS			
NIL	163 (47.4%)	89 (52.7%)	74 (42.3%)
ONE	166 (48.3%)	70 (41.4%)	96 (54.9%)
TWO	15 (4.4%)	10 (5.9%)	5 (2.9%)

Almost 28.5% of the people had more than one NCD with 2% having three NCDs. Regarding the duration of NCDs, 11% had more than 3 years. Almost half of the patients had some complications or co-morbidities and 4% had more than one complication. The distribution of number of complications among rural and urban people were statistically significant (p = 0.03).

III. METABOLIC RISK FACTOR PROFILE OF THE STUDY POPULATION

Among 188 people who had Diabetes in the study population, the health records of height and weight at present and 12 months back were available for 139 people.

Among the 188 people with Diabetes in the study population, the health records of FBS and PPBS values at present and 12 months back were available for 137 people.

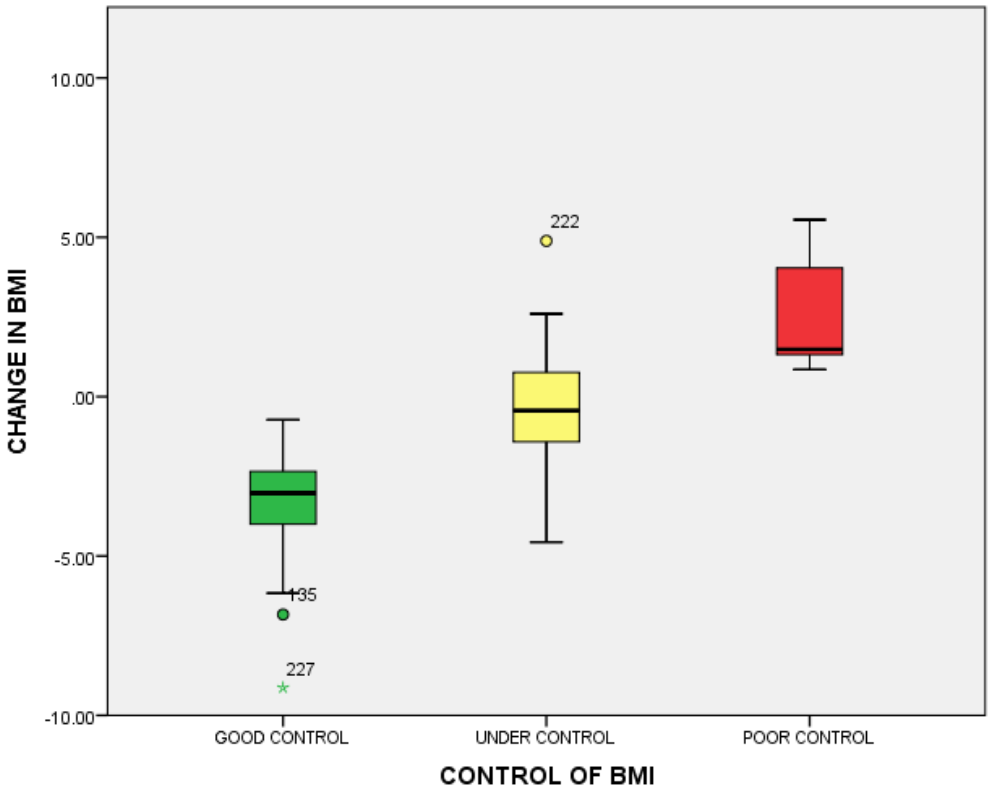
Among the 251 people with hypertension in the study population, the health records of blood pressure (both systolic and diastolic) at present and 12 months back values were available for 225 people.

Among the diabetic people, majority (75%) had their BMI under control over the past 1 year. Urban people had a better BMI control than rural people. Regarding blood sugar values, 40 – 50% of the people had a poor control over the past year. Urban people had a better control of blood sugar compared to rural people. Almost 52% of the people with hypertension had a poor control over their blood pressure in the last 1 year. Regarding blood pressure, rural people had a better control than urban people over the past 1 year.

Table.8. BMI Control among the Diabetic people in the study population

BMI CONTROL	RURAL	URBAN	TOTAL
GOOD CONTROL	15 (21.73%)	14 (20%)	29 (20.86%)
UNDER CONTROL	49 (71.01%)	54 (77.14%)	103 (74.1%)
POOR CONTROL	5 (7.24%)	2 (2.85%)	7 (5.03%)

Fig.7. Change in BMI among Diabetic people in various control groups

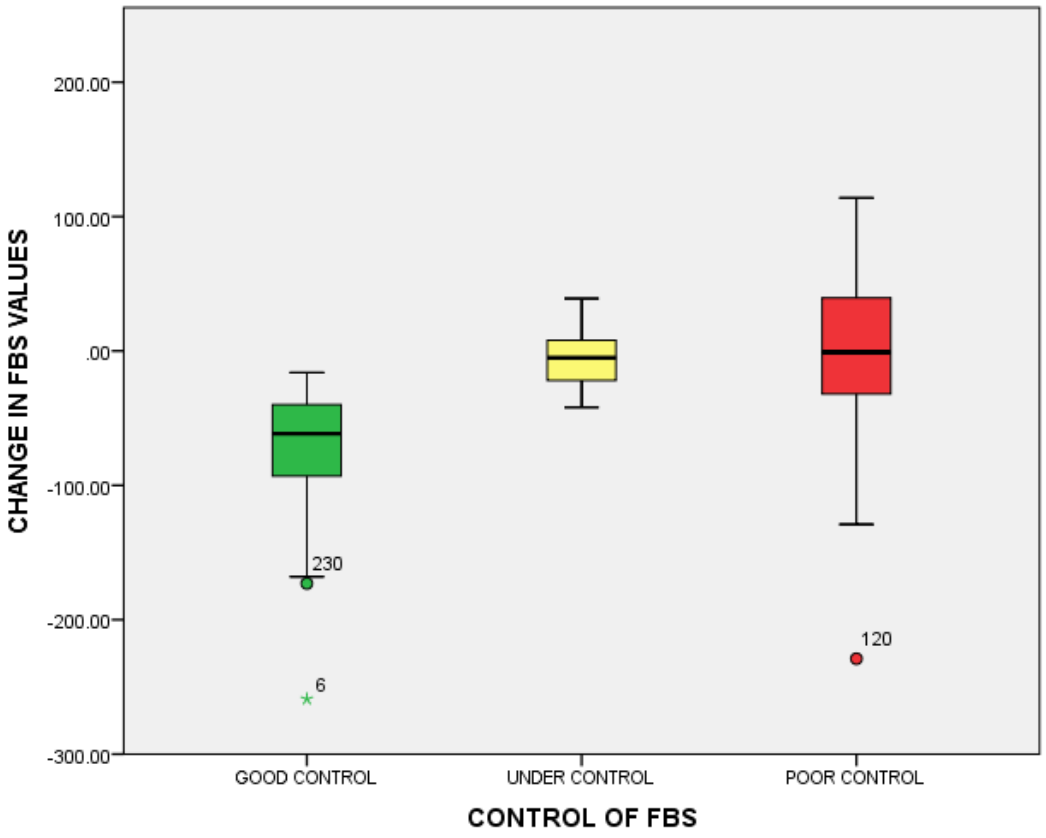


People who had a good control over their BMI showed a decrease of mean BMI of around 3 units in the past 1 year and the people with poor control had an increase of 2 units of BMI in the past 1 year.

Table.9. FBS Control among the Diabetic people in the study population

FBS CONTROL	RURAL	URBAN	TOTAL
GOOD CONTROL	17 (26.98%)	23 (31.08%)	40 (29.19%)
UNDER CONTROL	19 (30.15%)	23 (31.08%)	42 (30.65%)
POOR CONTROL	27 (42.85%)	28 (37.83%)	55 (40.14%)

Fig.8. Change in FBS among Diabetic people in various control groups

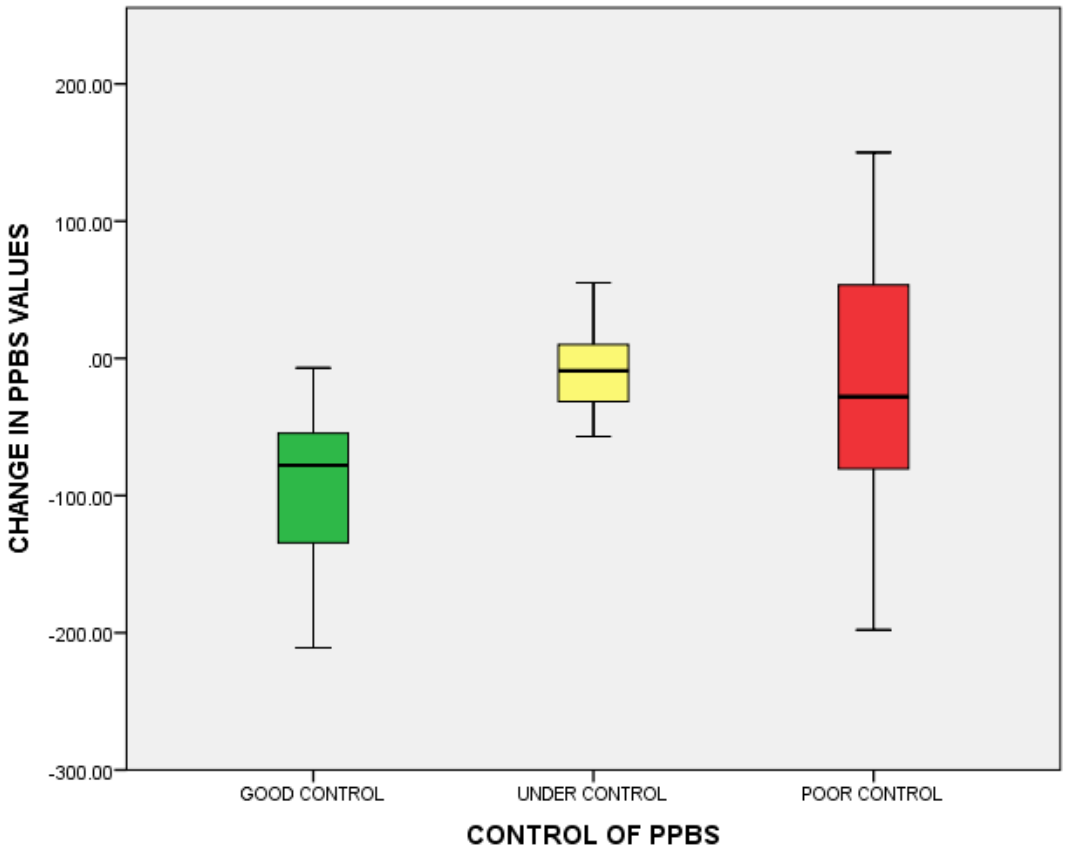


People who had a good control over their FBS showed a decrease of mean FBS of around 71 mg% in the past 1 year while the people with poor control had a decrease of 4 mg% of FBS in the past 1 year.

Table.10. PPBS Control among the Diabetic people in the study population

PPBS CONTROL	RURAL	URBAN	TOTAL
GOOD CONTROL	8 (12.69%)	35 (47.29%)	43 (31.38%)
UNDER CONTROL	10 (15.87%)	13 (17.56%)	23 (16.78%)
POOR CONTROL	45 (71.42%)	26 (35.13%)	71 (51.82%)

Fig.9. Change in PPBS among Diabetic people in various control groups

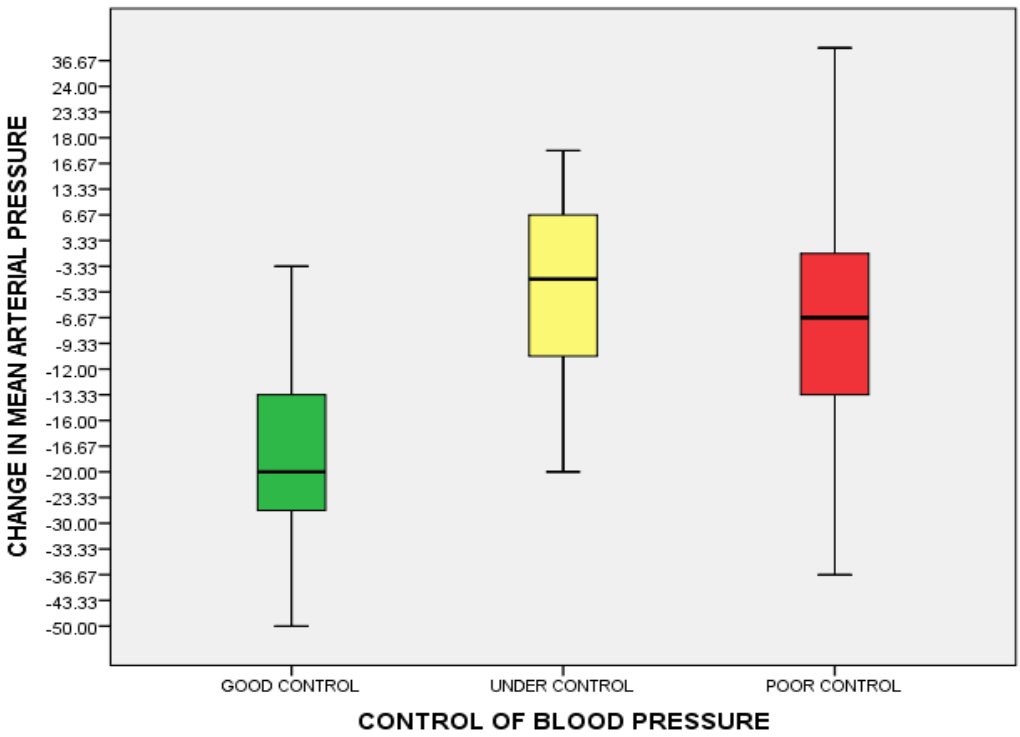


People who had a good control over their PPBS showed a decrease of mean PPBS of around 95 mg% in the past 1 year while the people with poor control had a decrease of 15 mg% of PPBS in the past 1 year.

Table.11. BP Control among the Hypertensive people in the study population

BP CONTROL	RURAL	URBAN	TOTAL
GOOD CONTROL	35 (38.46%)	47 (35.07%)	82 (36.44%)
UNDER CONTROL	13 (14.28%)	11 (8.2%)	24 (10.66%)
POOR CONTROL	43 (47.25%)	76 (56.71%)	119 (52.88%)

Fig.10. Change in MAP among Hypertensive people in various control groups



People who had a good control over their BP showed a decrease of mean MAP (mean arterial pressure) of around 20 mm Hg in the past 1 year while the people with poor control had a decrease of 6 mm Hg of MAP in the past 1 year.

IV. HEALTH RELATED BEHAVIOURS AMONG STUDY POPULATION

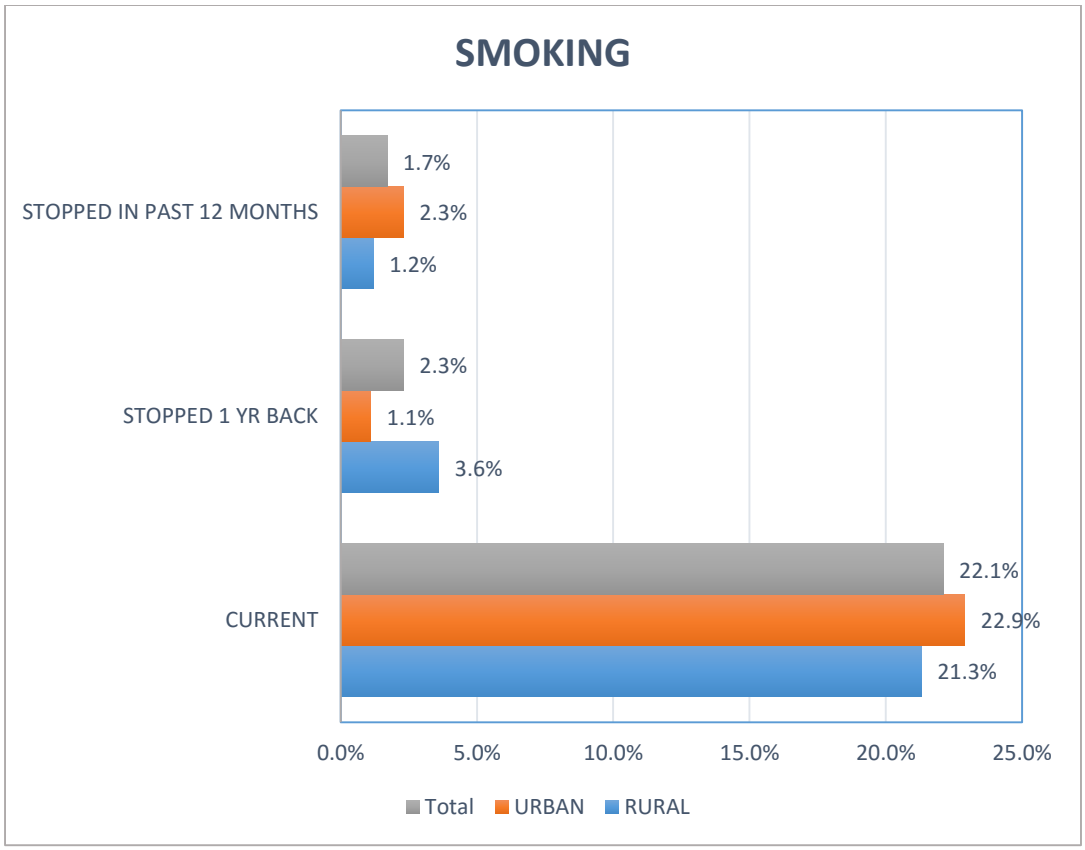
Table.12. Health related behaviours of the study subjects and their rural and urban differences

BEHAVIOUR	TOTAL (N = 344)	RURAL (N = 169)	URBAN (N = 175)
PHYSICAL ACTIVITY	144 (41.9%)	61 (36.1%)	83 (47.4%)
SALT INTAKE (<5g/d)	228 (66.3%)	111 (65.7%)	117 (66.9%)
FRUITS INTAKE	14 (4%)	164 (97%)	172 (98.3%)
NO DEEP FRIES/ TUBERS INTAKE	67 (19.5%)	30 (17.8%)	37 (21.1%)
APPROPRIATE DIET	48 (14%)	20 (11.8%)	28 (16%)

Almost more than 90% of the people had received knowledge about the lifestyle risk factors from the health care providers and also had the attitude of correcting the lifestyle. When it comes to practice only less than 50% follow the health advices.

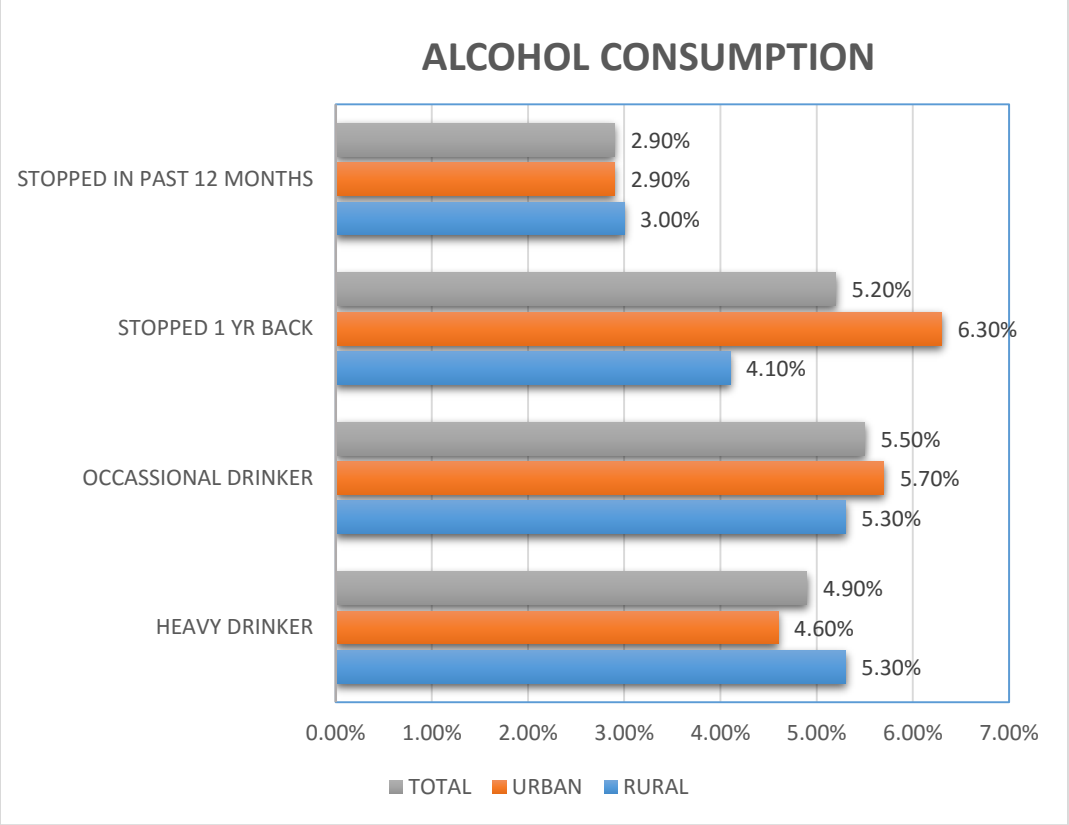
More number of urban people had a regular physical activity compared to rural people and the difference was statistically significant (χ^2 test, p = 0.033). Regarding the diet pattern, the more number of urban people followed an appropriate advised diet compared to rural people but the differences were not statistically significant.

Fig.11. Percentage of smoking habits among the study population and their rural and urban differences.



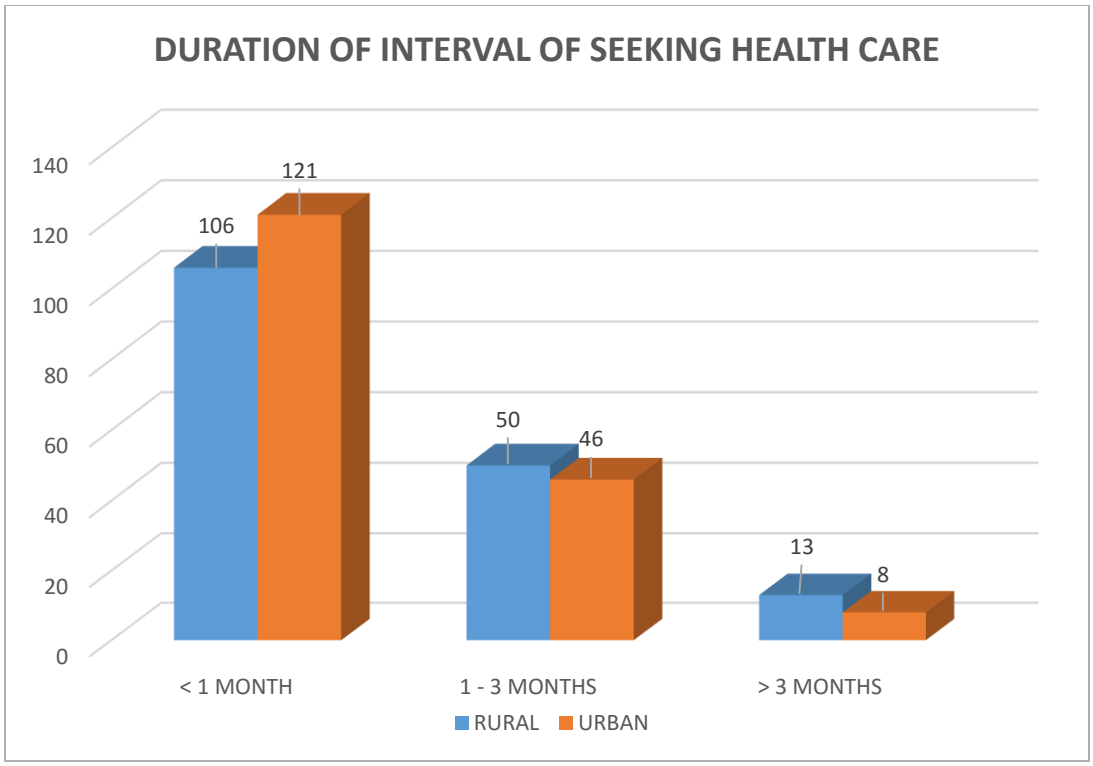
Around more than 20% of the study population were smoking currently with no much difference in rural and urban population. Among ex-smokers, more rural people stopped 1 year back and more urban people stopped in the past 12 months. The differences in the smoking habit among rural and urban population were not significant.

Fig.12. Percentage of alcohol drinking habits among the study population and their rural and urban differences.



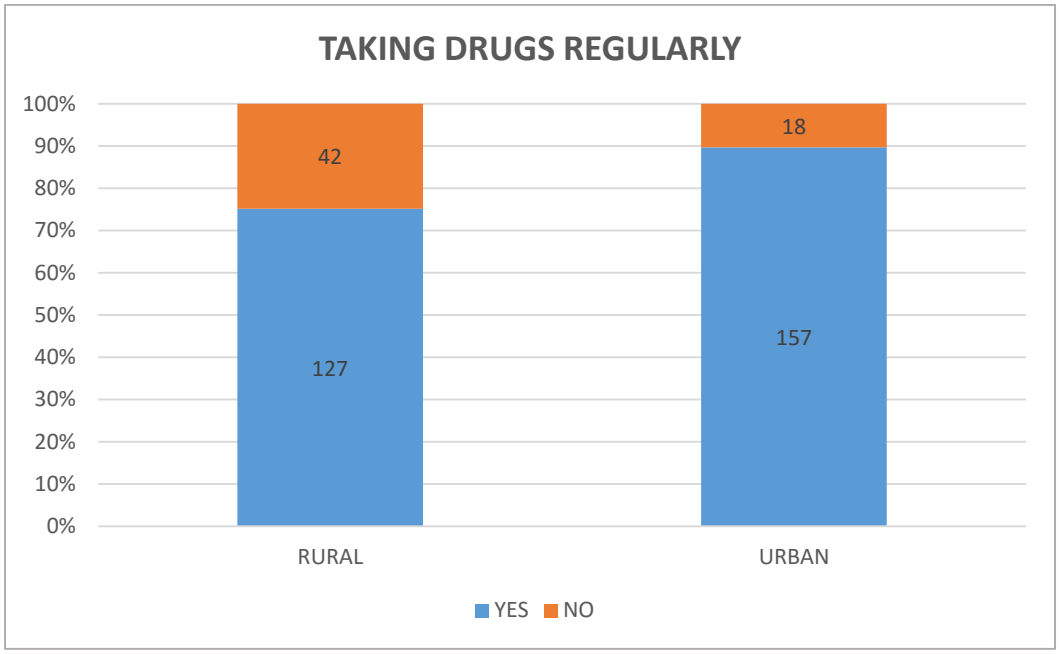
Among the study population, around 5% of the study population were heavy alcohol drinkers and 5% were occasional drinkers. More number of urban people stopped alcohol consumption 1 year back compared to rural but the response was almost same between rural and urban areas in the past 12 months. The differences in alcohol drinking habits among rural and urban population were not statistically significant.

Fig.13. Health seeking behaviour among the study population and their rural and urban differences.



Majority of the people (66%) had a good health seeking behaviour visiting their health care provider less than a month interval period in which the urban people were more compared to rural people. The differences in health seeking behaviour among rural and urban people was statistically significant (Fisher exact, p = 0.024).

Fig.14. Drug intake behaviour among the study population and their rural and urban differences.



The difference in regular intake of drugs among rural and urban population was statistically significant (χ^2 test, p = 0.001)

Table.13. Reason for irregular intake of drugs among the study population and their rural and urban differences

REASONS	RURAL (N = 42)	URBAN (N = 18)	TOTAL (N=60)
SIDE EFFECTS	9 (21.42%)	7 (38.88%)	16 (26.66%)
MORE EXPENSES	6 (14.28%)	2 (11.11%)	8 (13.33%)
TRANSPORT DIFFICULTIES	23 (54.76%)	5 (27.77%)	28 (46.66%)
OTHERS	4 (9.52%)	4 (22.22%)	8 (13.33%)

V. HRQOL OF THE STUDY POPULATION

Table.14. HRQOL scores of the study subjects

CRITERIA	MEAN (± S.D.)	MIN	MAX
PHYSICAL	47.86 (±10.78)	14.29	78.57
PSYCHOLOGICAL	50.81 (±12.07)	16.67	91.67
SOCIAL	38.44 (±17.43)	0.00	83.33
ENVIRONMENTAL	49.17 (±11.98)	15.63	84.38
OVERALL	46.57 (±9.42)	26.41	74.74

Fig.15. HRQOL scores – Individual domains distribution

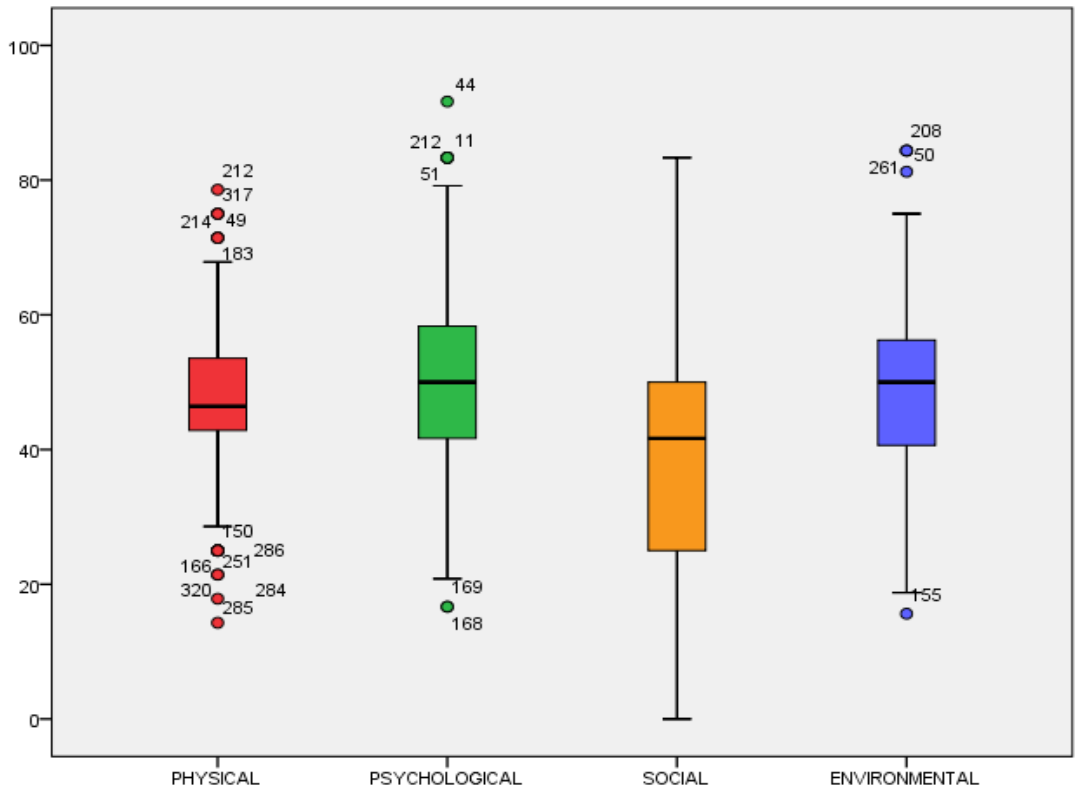


Fig.16. Rural & Urban differences in HRQOL scores of the study subjects

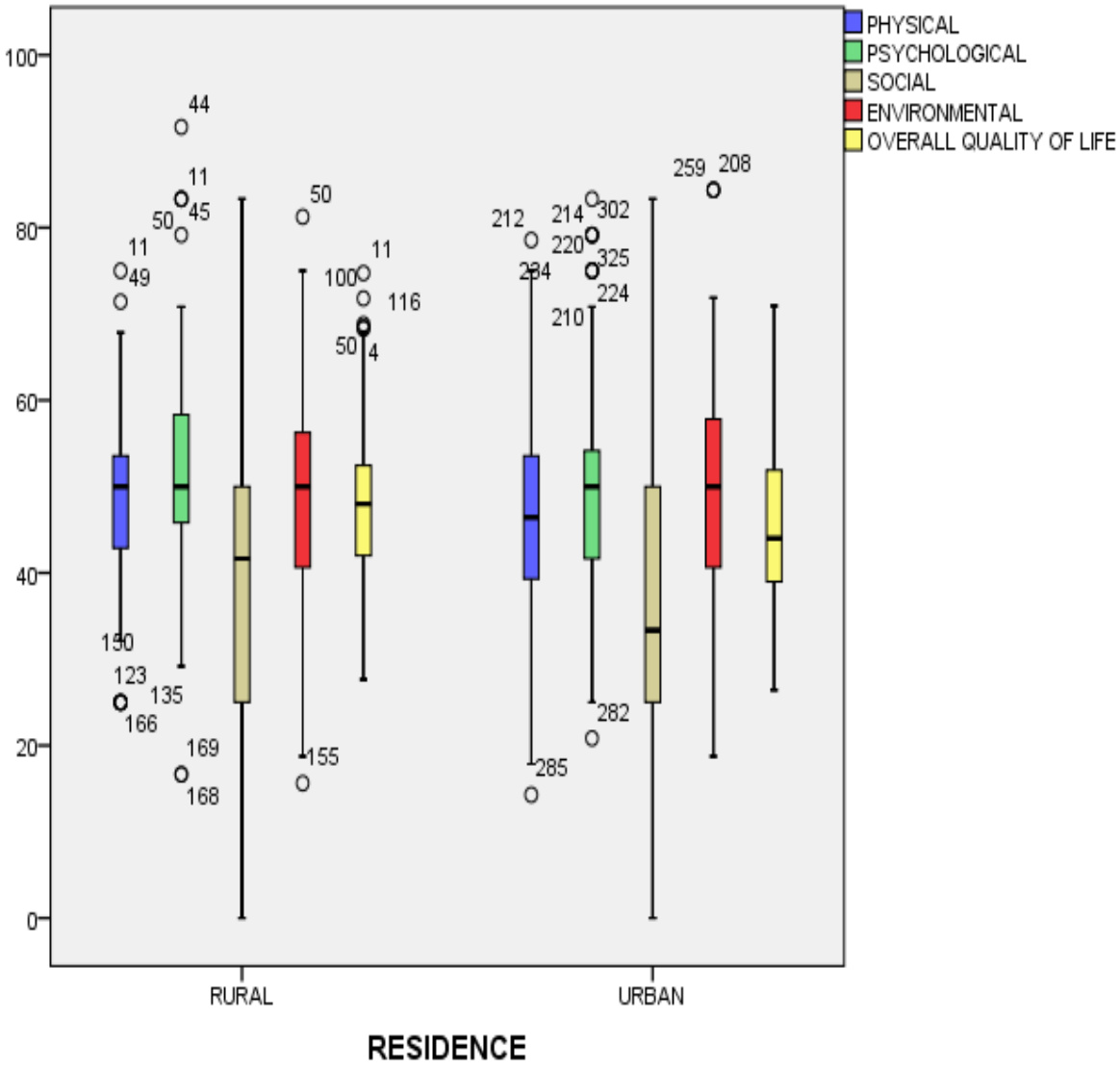


Table.15. Rural & Urban differences in HRQOL scores of the study subjects

BEHAVIOUR	RESIDENCE		p value
	RURAL	URBAN	
PHYSICAL	49.39 (±9.86)	46.39 (±11.45)	0.010
PSYCHOLOGICAL	51.75 (±12.16)	49.9 (±11.96)	0.157
SOCIAL	41.07 (±17.88)	35.9 (±16.66)	0.006
ENVIRONMENTAL	48.89 (±11.58)	49.45 (±12.4)	0.668
OVERALL	47.78 (±9.14)	45.41 (±9.57)	0.020

The overall HRQOL score among rural people was higher compared to urban people and the difference was statistically significant.

The physical domain of HRQOL was higher in rural than urban population and the difference was statistically significant.

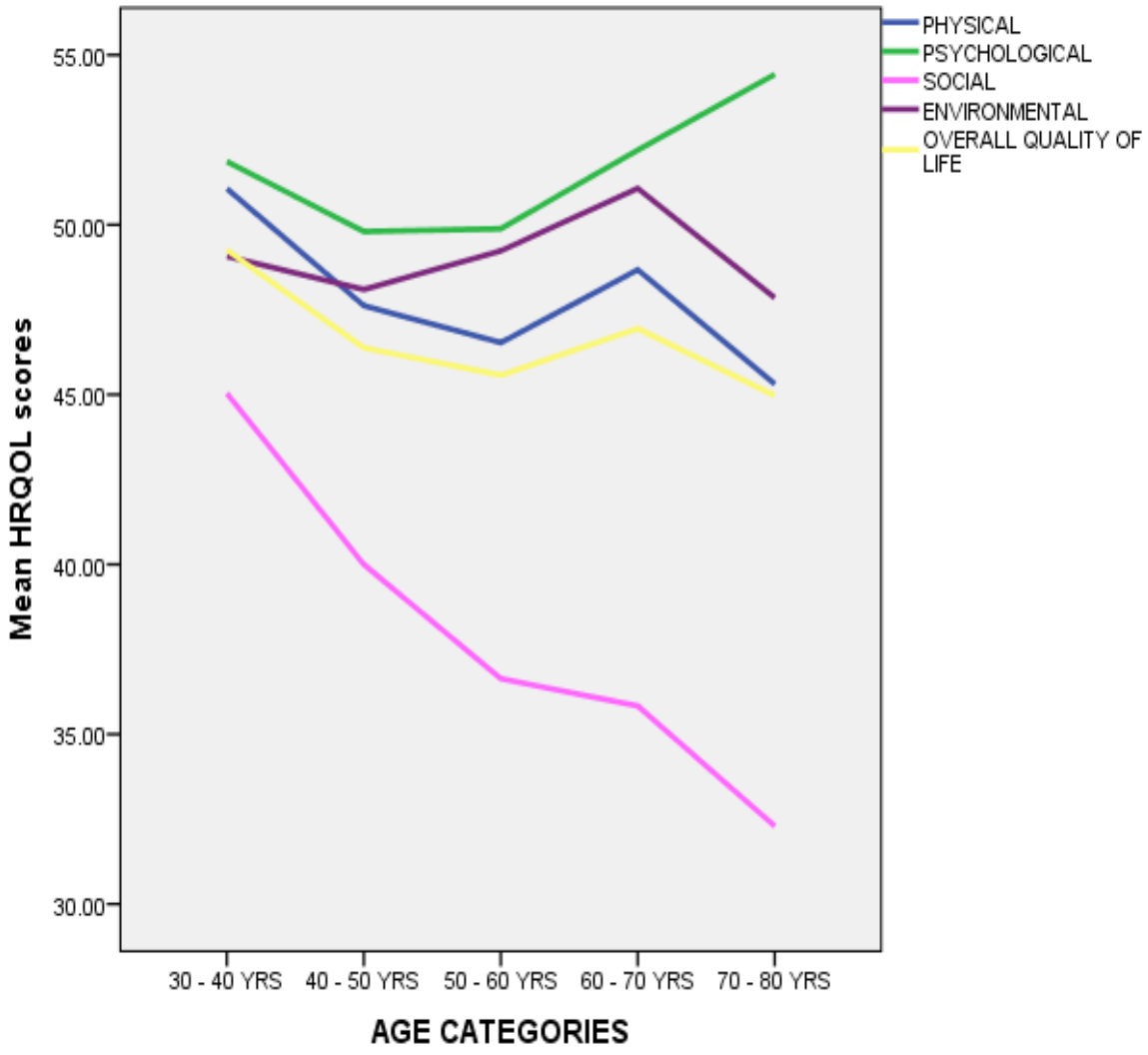
The social domain of HRQOL was higher in rural than urban people and the difference was statistically significant.

The psychological domain was also higher in rural people but the difference was not significant statistically.

The environmental domain of HRQOL was higher in urban people than rural people but the difference was not statistically significant.

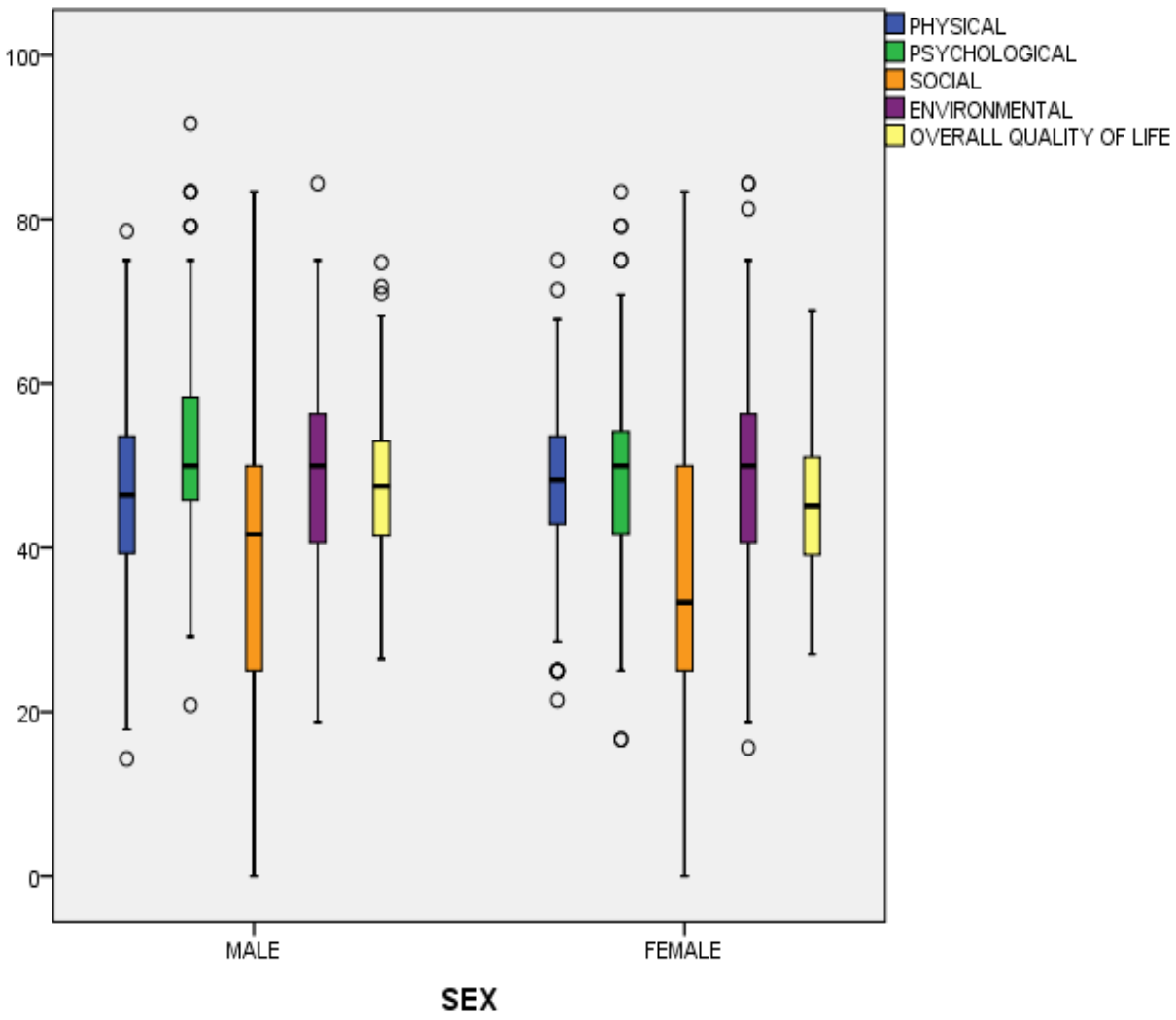
VI. FACTORS INFLUENCING EACH DOMAIN & OVERALL HRQOL AMONG THE STUDY POPULATION

Fig.17. HRQOL scores distribution among various age categories



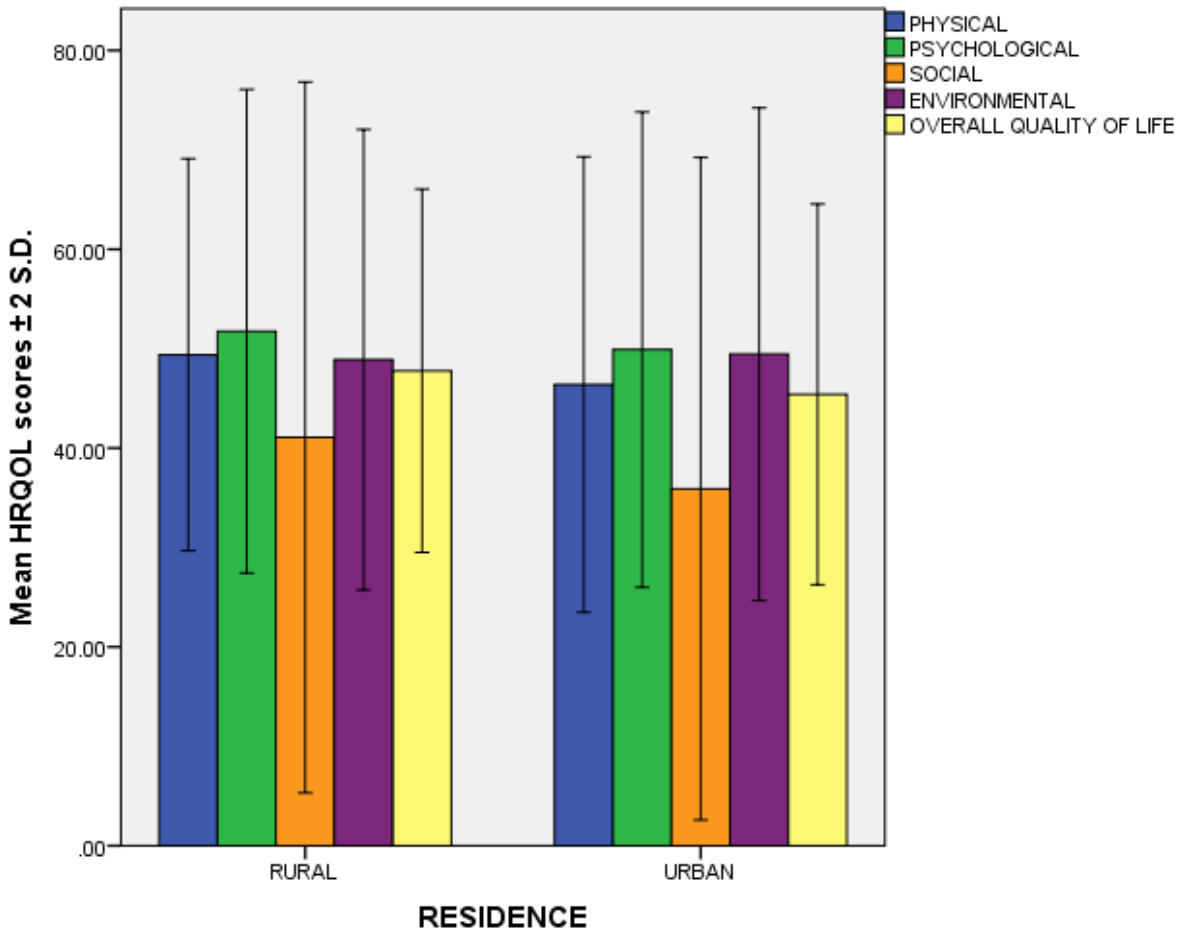
The social domain of HRQOL score showed a gradual decline over increase with age and the difference was statistically significant (ANOVA, $p = 0.015$). The overall HRQOL and the other domains didn't have a statistically significant difference over various age categories.

Fig.18. HRQOL scores distribution among Male & Female Sex.



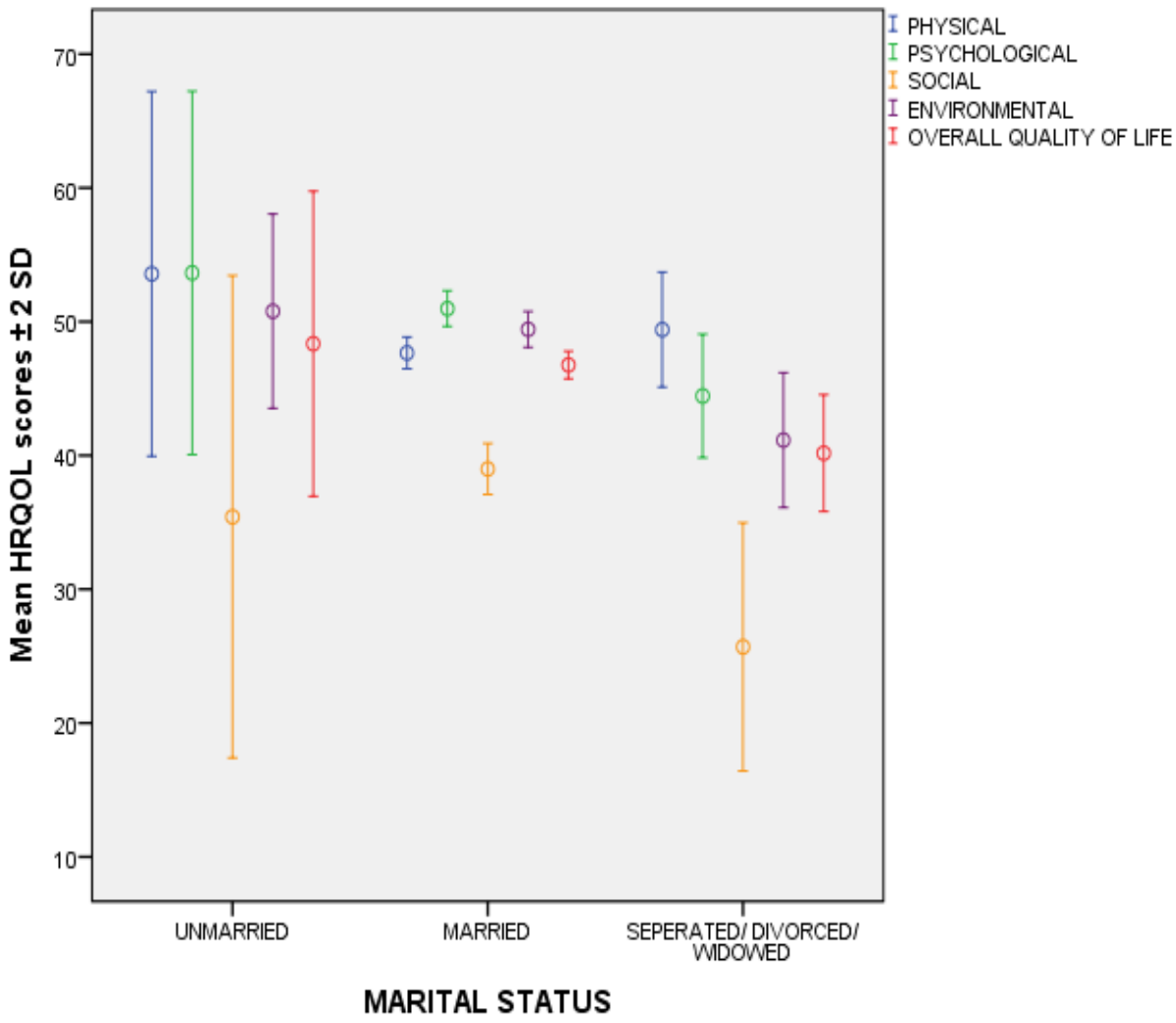
The overall HRQOL score among males (47.7 ± 9.8) was higher than females (45.4 ± 8.9) and the difference was statistically significant ('t' test, $p = 0.02$). The difference in the scores of social domain of HRQOL among males and females were statistically highly significant ('t' test, $p < 0.001$).

Fig.19. HRQOL scores distribution among Rural & Urban residence.



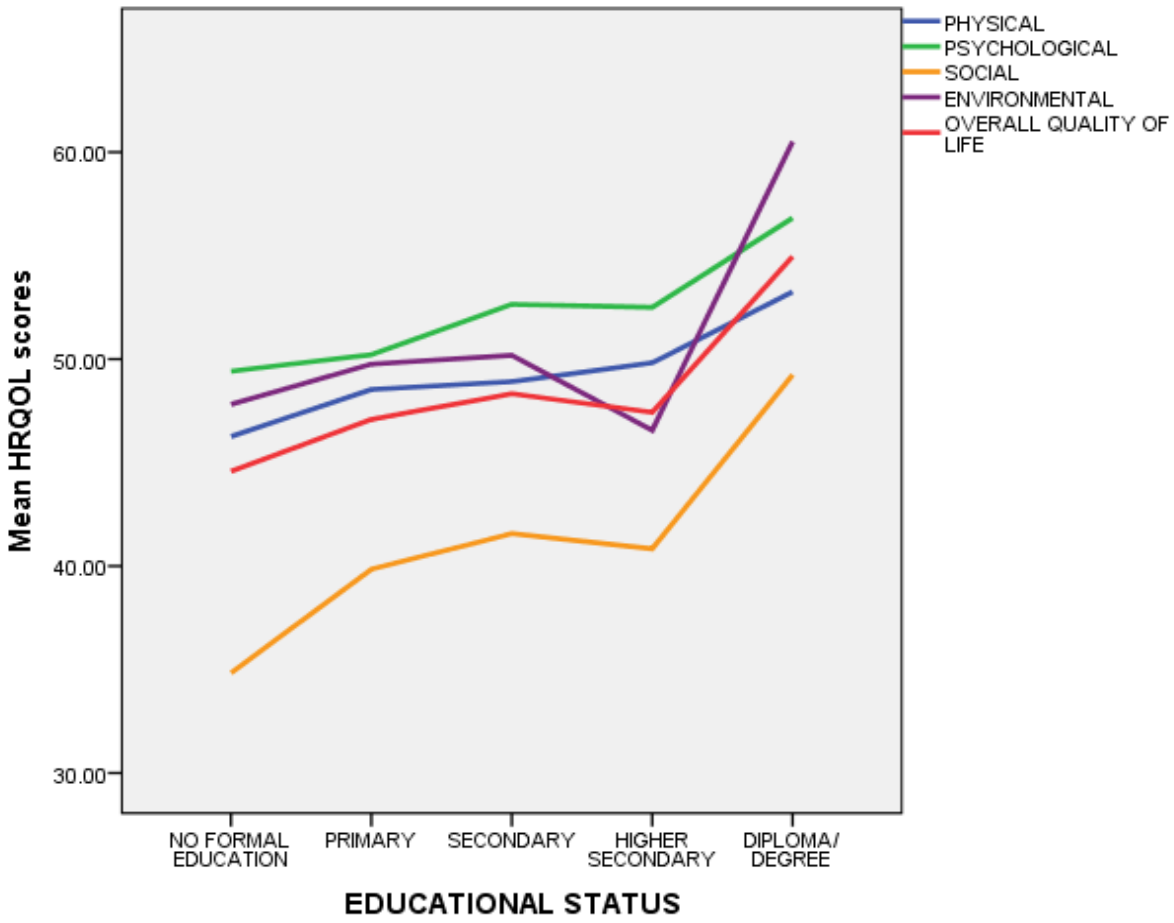
The overall HRQOL score among males (47.8 ± 9.1) was higher than females (45.4 ± 9.5) and the difference was statistically significant ('t' test, p = 0.02). The difference in the physical and social domains of HRQOL among rural and urban population were statistically significant ('t' test, physical, p = 0.01, social, p = 0.006).

Fig.20. HRQOL scores distribution among different marital status.



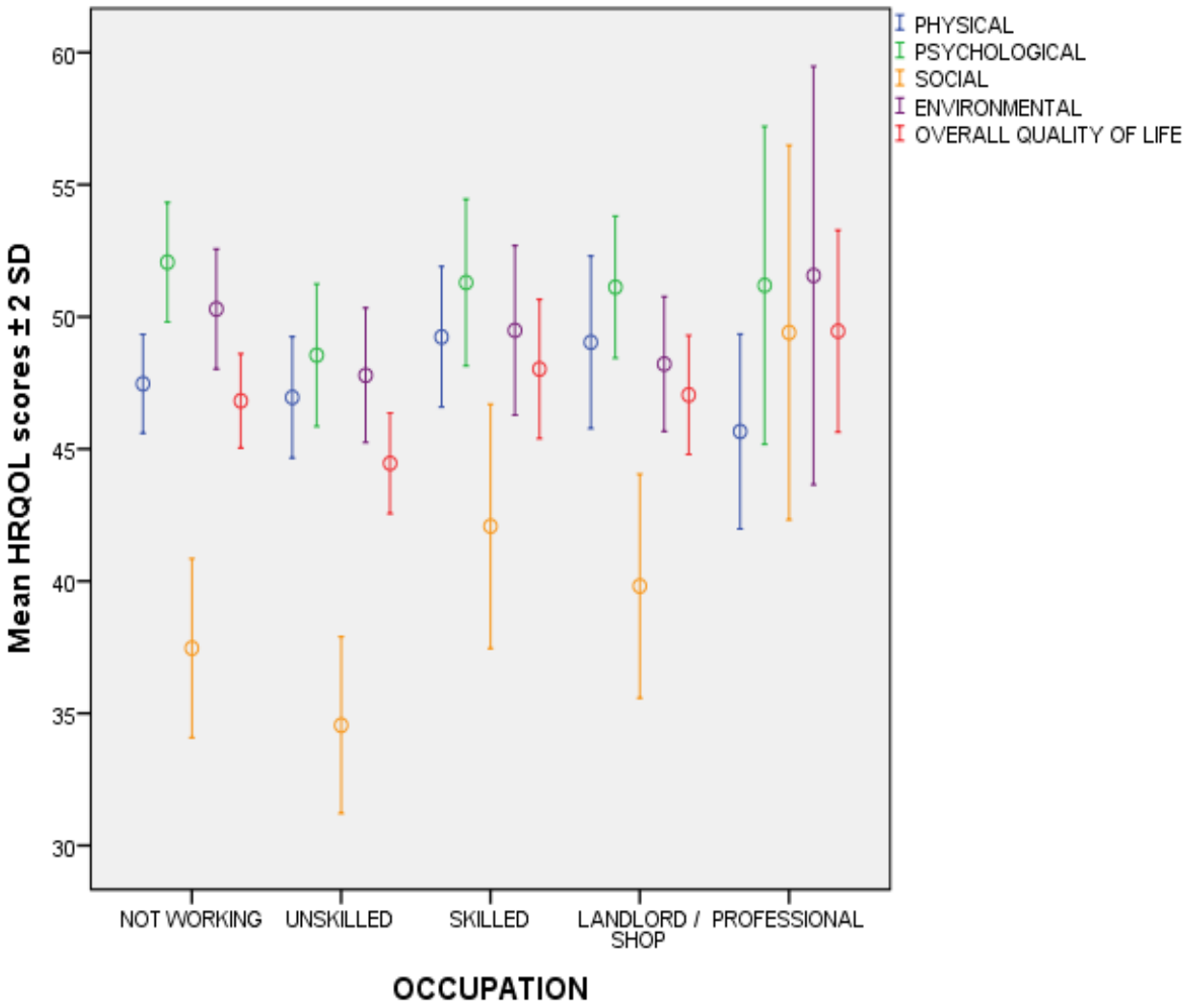
The overall HRQOL score among unmarried (48.3 ± 16.1) was higher than married (46.7 ± 9.2) and living separated or divorced (40.1 ± 7.5) and the difference was statistically significant (ANOVA, $p = 0.049$). The difference in the scores of social domain of HRQOL among various marital status were statistically highly significant (ANOVA, $p < 0.03$).

Fig.21. HRQOL scores distribution among different educational status.



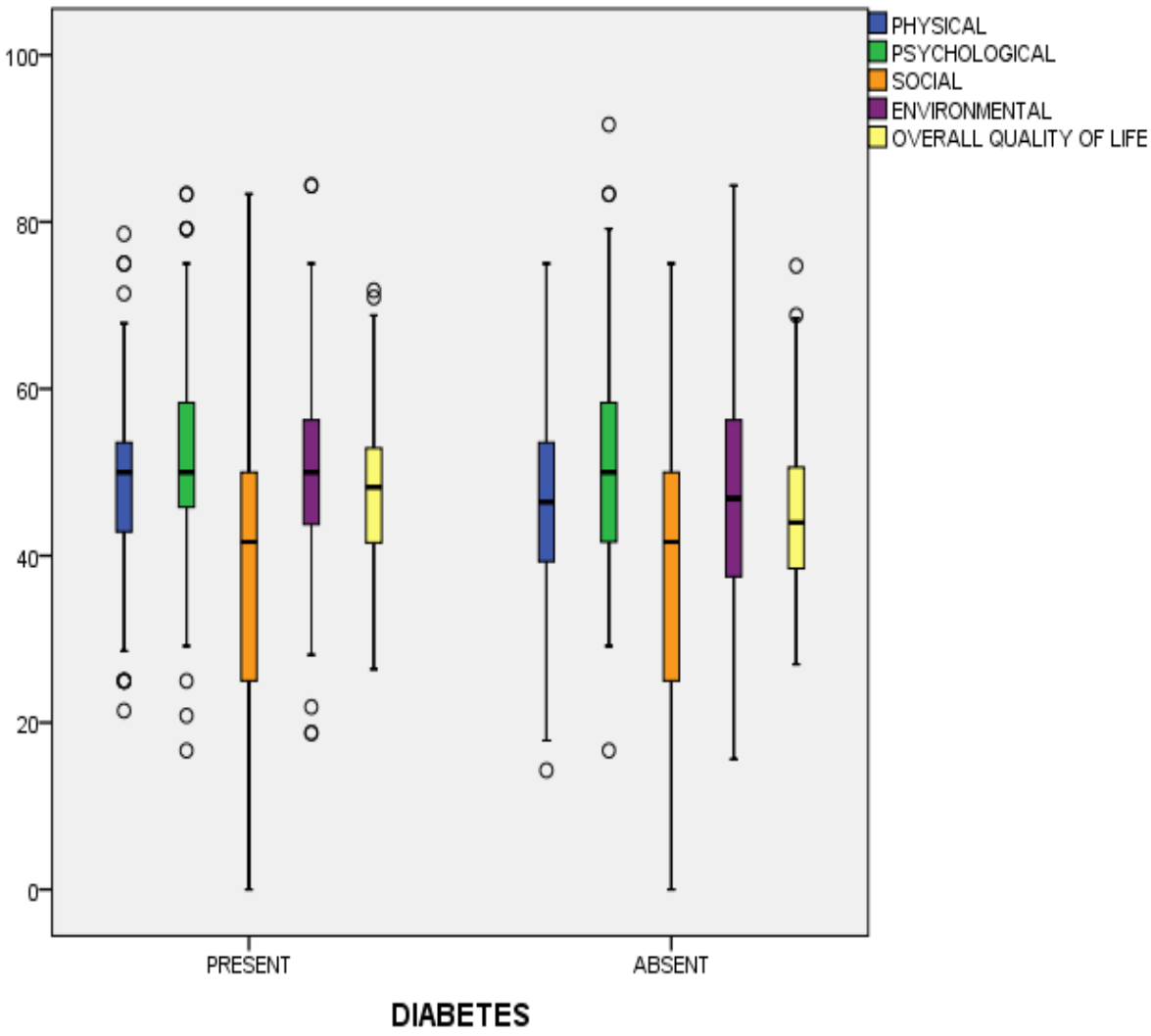
Among the people of various educational status, the overall HRQOL score among people with no formal education was low (44.6 ± 9.2) and those with degree holders was high (54.9 ± 10.2). The difference of overall HRQOL scores among various educational categories were statistically significant (ANOVA, p = 0.001). The social and environmental domain score differences were also statistically different. (ANOVA, social, p = 0.006, environmental, p = 0.008)

Fig.22. HRQOL scores distribution among different occupational status.



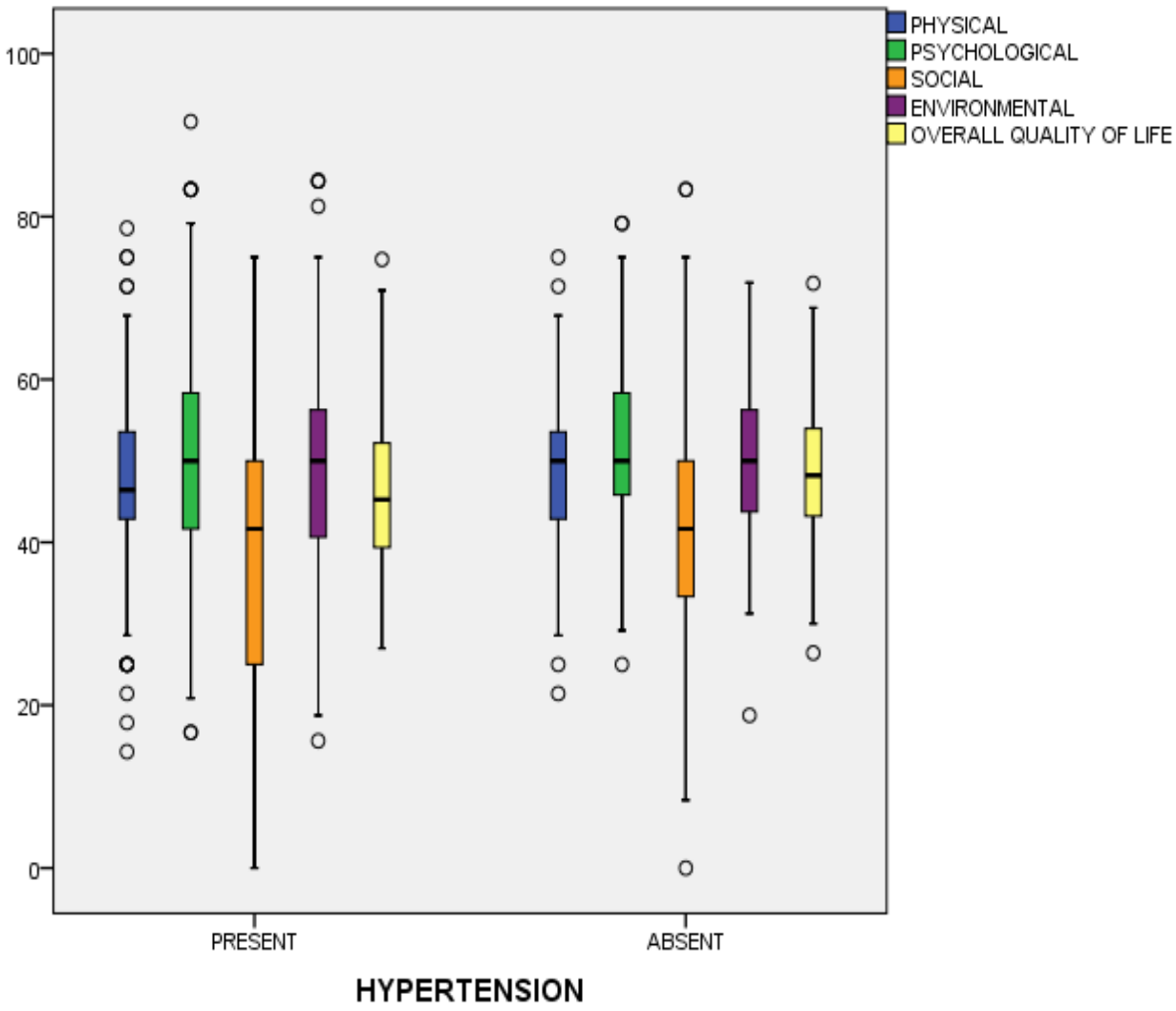
The social domain of HRQOL score showed an obvious difference over various occupational categories and the difference was statistically significant (ANOVA, p = 0.09). The overall HRQOL and the other domains didn't have a statistically significant difference over various occupational categories.

Fig.23. HRQOL scores distribution among people with Diabetes and people with other NCDs.



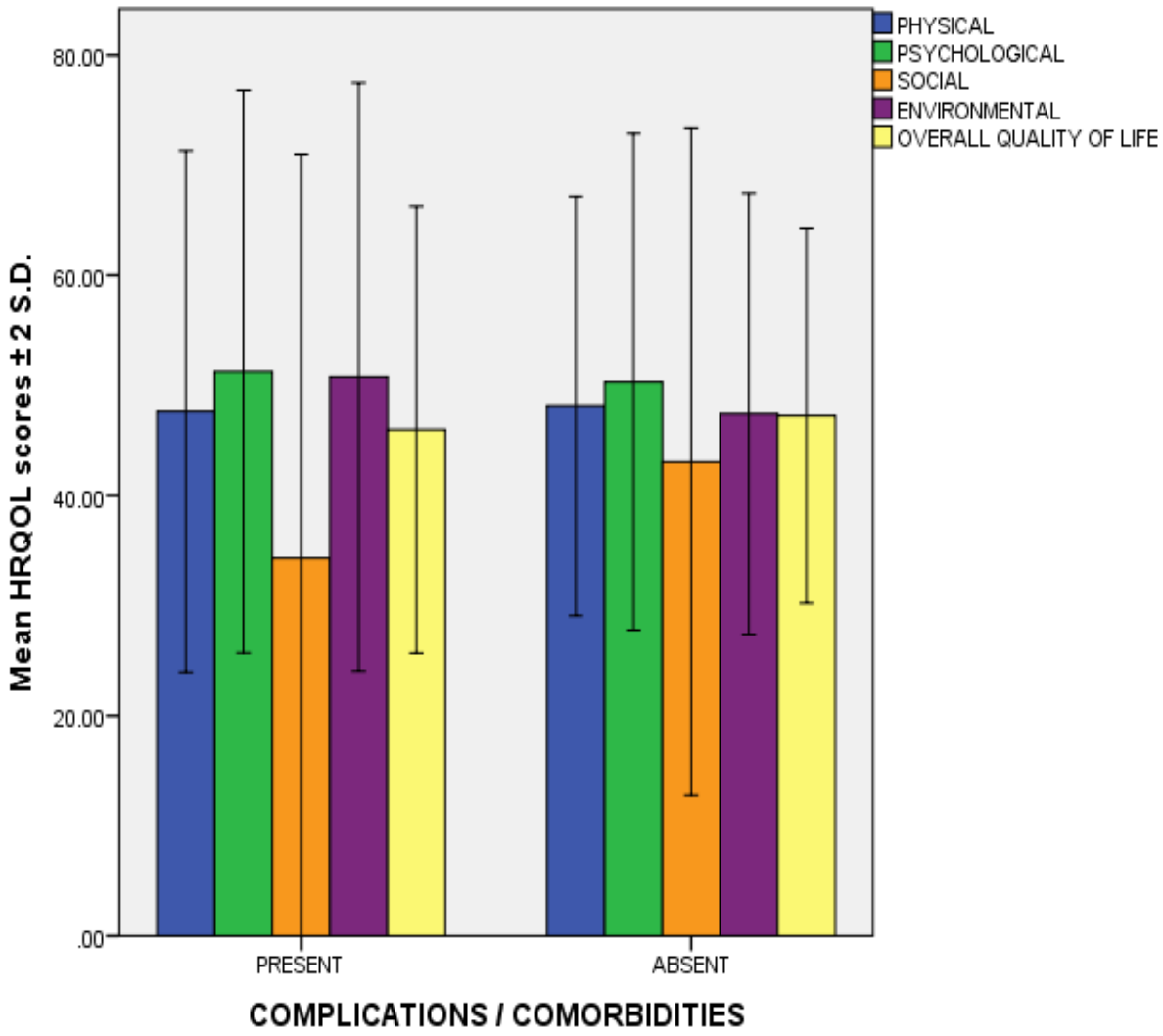
The overall HRQOL score among the people with Diabetes (47.6 ± 8.7) was higher compared to people with other NCDs (45.2 ± 9.9) and the difference was statistically significant ('t' test, p = 0.016). The difference in scores of social domain of HRQOL among the people with Diabetes and people with other NCDs were statistically significant (('t' test, p = 0.021).

Fig.24. HRQOL scores distribution among people with Hypertension and people with other NCDs.



The overall HRQOL score among the people with Hypertension (46.1 ± 9.5) was lower compared to people with other NCDs (47.9 ± 8.8) and the difference was not statistically significant ('t' test, p = 0.09). The difference in scores of social domain of HRQOL among the people with Hypertension and people with other NCDs were statistically significant (('t' test, p = 0.015).

Fig.25. HRQOL scores distribution among people with/without Complications.



The overall HRQOL score among the people with Complications (45.9 ± 10.1) was lower compared to people without complications (47.2 ± 8.5) and the difference was not statistically significant ('t' test, p = 0.22). The difference in scores of social and environmental domain of HRQOL among the people with Complications and people without complications were statistically significant ('t' test, social, p = 0.001, environmental, p = 0.01).

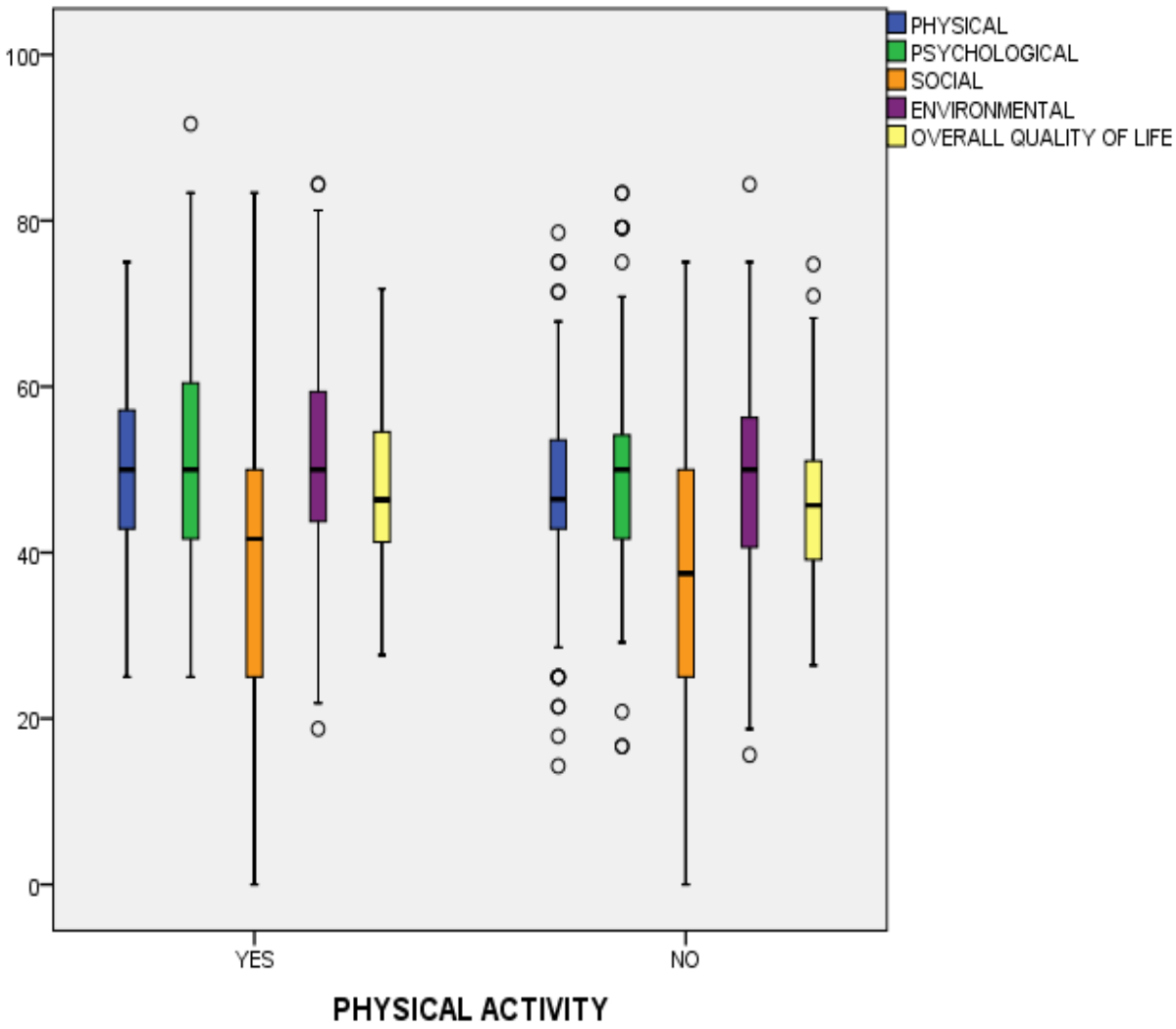
Table.16. HRQOL scores distribution among people with Complications.

COMPLICATION/ COMORBIDITY	CRITERIA	MEAN (± S.D.) HRQOL SCORE	'p' value
RETINOPATHY	PRESENT	46.6 (±8.9)	0.967
	ABSENT	46.55 (±9.62)	
NEPHROPATHY	PRESENT	46.52 (±9.85)	0.988
	ABSENT	46.57 (±9.42)	
NEUROPATHY	PRESENT	41.78 (±9.02)	0.037*
	ABSENT	46.8 (±9.39)	
MUSCULAR DISORDERS	PRESENT	46.54 (±11.69)	0.983
	ABSENT	46.57 (±8.92)	
ASTHMA / COPD	PRESENT	45.43 (±10.3)	0.61
	ABSENT	46.63 (±9.38)	
OTHERS	PRESENT	37.33 (±3.67)	0.088
	ABSENT	46.65 (±9.41)	

'p' values are arrived by 't' test at 5% significance level; * - significant

The difference in overall mean HRQOL scores among people with neuropathy and people without neuropathy was statistically significant. The other complications or comorbidities influence on HRQOL among the study population was not statistically significant.

Fig.26. HRQOL scores distribution among people with and without Physical Activity.



The overall HRQOL score among people with physical activity (47.8 ± 9.6) was higher compared to people without physical activity (45.6 ± 9.1) and the difference was statistically significant ('t' test, p = 0.037). The difference in scores of individual domains of HRQOL among people with and without physical activity are not statistically significant.

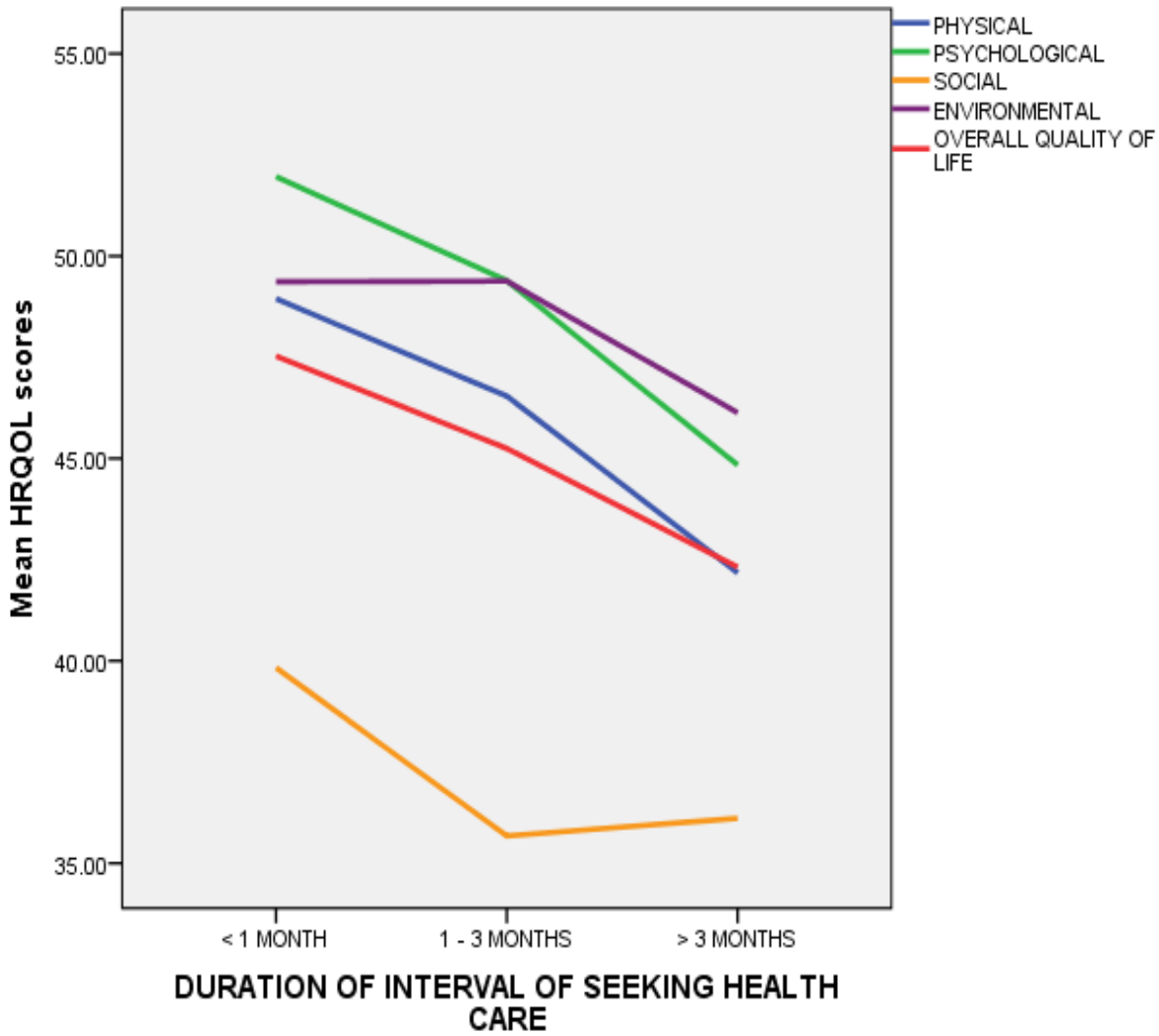
Table.17. HRQOL scores distribution among people with various Diet patterns.

CRITERIA	HRQOL DOMAINS				
	PHYSICAL	PSYCHO LOGICAL	SOCIAL	ENVIRON MENTAL	OVERALL
SALT INTAKE					
< 5g / day	49 (±10.7)	52.2 (±12.2)	39.6 (±17.4)	49.9 (±12.6)	47.7 (±9.8)
>= 5g / day	45.4 (±10.4)	48 (±11.3)	36.1 (±17.2)	47.7 (±10.5)	44.3 (±8.1)
p value	0.003*	0.002*	0.08	0.113	0.002*
FRUITS INTAKE					
YES	47.7 (±10.7)	50.6 (±11.6)	38 (±17.3)	49 (±11.9)	46.3 (±9.2)
NO	51.7 (±12.8)	57.2 (±25.6)	54.1 (±14.7)	53.1 (±14)	54 (±15.1)
p value	0.299	0.125	0.01*	0.346	0.022*
DEEP FRIES / TUBERS INTAKE					
NO	44.8 (±9.6)	48 (±11.3)	35.9 (±17.6)	48.4 (±10.6)	44.2 (±8.7)
YES	48.5 (±10.9)	51.4 (±12.1)	39 (±17.3)	49.3 (±12.3)	47.1 (±9.5)
p value	0.01*	0.034*	0.191	0.564	0.028*

'p' values are arrived by 't' test at 5% significance level; * - significant

The difference in HRQOL scores among people with salt intake <5g/day and >5g/day are statistically significant in all domains except environmental domain. The overall HRQOL score differences in people with and without fruits consumption and also in people without and with deep fries/ tubers consumption were statistically significant.

Fig.27. HRQOL scores distribution among people with different health seeking behaviour.



With the increase in the duration of interval of seeking healthcare provider, there is a decline in the HRQOL scores. The differences in overall HRQOL score among people with increasing interval of seeking health care provider was statistically significant (ANOVA, p = 0.014). The differences in individual domains were also significant in physical (ANOVA, p = 0.08) and psychological (ANOVA, p = 0.014).

Table.18. Multiple Linear Regression results for predictors of overall HRQOL score among people with NCDs.

PREDICTORS OF HRQOL	Unstandardized Coefficients		Sig.
	Beta	Std. Error	
(Constant)	57.035	3.972	0.00
RESIDENCE	-2.064	0.971	0.034
MARITAL STATUS	-3.587	2.052	0.081
EDUCATIONAL STATUS	2.642	0.962	0.006
SOCIO ECONOMIC CLASS	-1.997	1.334	0.135
DIABETES	2.425	0.977	0.014
NEUROPATHY	-4.788	2.251	0.034
PHYSICAL ACTIVITY	1.562	0.981	0.112
SALT USAGE >5g/day	-2.495	1.018	0.015
FRUITS CONSUMPTION	-9.409	3.192	0.003
DEEP FRIES/ TUBERS CONSUMPTION	3.101	1.205	0.01
INTERVAL OF SEEKING HEALTH CARE	-2.307	0.802	0.004

R^2 = 0.175; ADJUSTED R^2 = 0.148; ANOVA MODEL FIT, p < 0.001

The urban residence, living separated, lower socio economic class, presence of neuropathy, low physical activity, salt usage >5g per day diet, consumption of deep fries and tubers, duration of seeking healthcare provider more than 1 month are significant negative predictors of HRQOL. Increase in educational status, presence of Diabetes compared to other NCDs and fruits consumption are positive predictors of HRQOL.

7. DISCUSSION

7.1. DEMOGRAPHY OF THE STUDY POPULATION

The study population included 344 individuals with majority of them in 40 – 60 years age group. The sex distribution is almost equal with males (48%) and females (52%). As our study population included people 30 years and above, most of the subjects were married with only very few unmarried (2%) and living separated or divorced (3%). Nearly two thirds of the families are living nuclear which has no difference between urban and rural areas. This signifies the trend of increase in nuclear families in our state.

There were more illiterates in urban area (48%) compared to rural area (39%) and rural area had more people with higher forms of education compared to urban areas. But in the NCD risk factor survey by ICMR,[18] it states that illiterates are more pronounced in rural areas than urban. Unemployed people were higher in urban areas (39%) compared to rural areas (28%). Lower and lower middle class people were higher in urban areas compared to rural areas. This is attributed to the perspective of industrialization and urbanization of many parts resulting in the increase in literacy in rural parts and at the same time, increase in urban slums depriving the literacy in urban areas. This ultimately reflects in their occupational status and socio economic status.

7.2. RURAL & URBAN DIFFERNCES IN NCD PROFILE

Among the Diabetics, more people belonged to rural population (55.3%) compare to urban (44.7%), whereas urban population (55%) had a more representation in the hypertensives compare to rural (45%). As per ICMR study, urban population had more percentage of diabetes and hypertensive patients compare to rural population. This can be attributed to increase in sedentary lifestyle in rural population and their negligence in following the right pattern of diet and increase in stress both vocationally and environmentally in urban areas.

Urban people (55%) had relatively more number of people with complications compared to rural people (45%). Co-morbidities like musculoskeletal disorders and chronic respiratory disorders are more prevalent among urban people compared to rural people. Retinopathy was more prevalent in urban population which is a common complication of hypertension which was more prevalent in urban population in this study.

7.3. HEALTH RELATED BEHAVIOURS AMONG PEOPLE WITH NCDs.

The study population as a whole had 42% of the people who followed prescribed physical activity. More number of urban people had a good physical activity compared to rural people. The ICMR study states that 66% of the people had low physical activity which almost coincides with our

study. But ICMR study states physical inactivity is more in urban areas than rural which is contradictory to our study. Previously the sedentary lifestyle was more prevalent in urban people but the trend has shifted to even rural people making their lifestyle too more sedentary resulting in less physical activity.

Regarding Diet, 66% of the people included less than 5 g of salt in their food daily. Only 4% of the people consumed fruits or vegetables at least 5 days per week. 20% of the people didn't include deep fried foods and tuber foods in their diet. ICMR study says only 1% of the people consumed fruits and vegetables in their diet regularly. The knowledge about proper diet to be followed is given by the health care provider but their attitude and practice towards diet is very worse. Their socio economic status also plays a role in including fruits and vegetables in their diet irrespective of their residence.

22% of the study population were current smokers and 4% were ex-smokers. There were no much difference in the number of smokers among urban and rural people. This is supported by ICMR study which states that urban and rural prevalence of smoking was almost similar and 23% of its study population were using tobacco.

13% of the study population was indulged in alcohol intake out of which 8% were occasional drinkers and 5% were heavy drinkers. 5% were found to be ex drinkers. There was no much difference in alcohol intake between

urban and rural areas. ICMR study states that alcohol intake is somewhat higher in rural areas than urban areas.

In the study population, among the diabetics, 7% had poor control over their weight which reflects in their BMI. Urban population had more people with better control over their BMI than rural people. Considering the control over their sugar levels, around 40% had poor control of fasting sugar level and 51% had poor control of post prandial sugar levels. In fasting blood sugar levels, there was no much difference between urban and rural people but regarding post prandial sugar levels, urban people had better control compared to rural people. Among the hypertensives, the total study population didn't show a good response in control over their blood pressure, in which urban people were worse compared to rural people. The above results clearly indicate the increased prevalence of diabetes in rural population and increased prevalence of hypertension in urban population in this study.

Regarding health seeking behaviour, more number of urban people (69%) visited their health care provider every month regularly compared to rural people (62%). Among the study population, nearly 82% of the people had a regular drug intake. More number of urban people took their drugs regularly compared to rural people. Rural people attributed transport difficulties as the most common reason for not getting drugs regularly from their health care provider.

7.4. RURAL & URBAN DIFFERENCES IN HRQOL OF PEOPLE WITH NCDs

Taking into account the Health Related Quality Of Life scores of the study population, rural people (47.78 ± 9.14) had a higher mean QOL score than urban people (45.41 ± 9.57).

The physical domain of HRQOL of rural people (49.39 ± 9.86) was higher than urban people (46.39 ± 11.45) and the difference was statistically significant. In Abhay Mudey et al study [32] also, the physical domain of HRQOL was higher among rural compared to urban people.

The psychological domain of HRQOL of rural people (51.75 ±12.16) was higher than urban people (49.9 ± 11.96) but the difference was not statistically significant. In Abhay Mudey et al study also, the psychological domain of HRQOL was higher among rural compared to urban people.

The social domain of HRQOL of rural people (41.07 ± 17.88) was higher than urban people (35.9 ± 16.66) and the difference was statistically significant. . But in Abhay Mudey et al study also, the social domain of HRQOL was higher among urban compared to rural people.

The environmental domain of HRQOL of rural people (48.89 ± 11.58) was lower than urban people (49.45 ± 12.4) but the difference was not statistically significant. In Abhay Mudey et al study also, the environmental domain of HRQOL was higher among urban compared to rural people.

In Abhay Mudey et al study, the study population considered was elderly people above 60 years. Their social and environmental aspects of health may differ from this study population due to the age criteria.

7.5. FACTORS INFLUENCING THE HRQOL OF PEOPLE WITH NCDs.

Considering the overall study population, the mean HRQOL score of overall quality of life was 46.57 ± 9.42 which was lower than the score stated in Ganesh Kumar et al [31] study (49.74 ± 10.21). The scores of individual domains also were less when compared to Ganesh Kumar et al study except social domain which was higher in this study. The trend of scores remained the same in both studies. The factors associated with lower HRQOL coincided with both study were no schooling, living single and musculoskeletal disorders.

In Vishaka Jain et al study[28] , Diabetes patients had a lower HRQOL score compared to non-diabetic controls but the difference was not statistically significant. In the present study, diabetic people had a better HRQOL score (47.68 ± 8.79) compared to people with other NCDs (45.23 ± 9.98) and the difference was statistically significant. Diabetes disease does not have a significant effect on quality of life.

In Sazlina et al,[26] the study showed significant difference in HRQOL scores among people with one NCD and people with more than one NCD whose score was lower. But in the present study, there was no

significant difference in people with one NCD and more than one NCD. This may be due to the proper lifestyle adaptations provided by the health care providers in our community.

In Sazlina et al, the study showed decrease in HRQOL score among age group of 65 years and above and the difference was significant. But in the present study, there was no significant difference in HRQOL scores among various age groups. This may be attributed to the reason that the older people accommodated to live with the NCDs accounting to the longer duration of the disease.

The present study showed significant difference in the HRQOL scores between males (47.79 ± 9.81) and females (45.43 ± 8.91) in the study population and the score was lower among females. Similar results were suggested by Sazlina et al study.

In Sazlina et al, the study showed the HRQOL score among married people was higher than people living single and the difference was significant. The present study also supported the fact that HRQOL score was higher in people living with spouse than people living single.

The present study showed a gradual increase in HRQOL scores along with increasing levels of education and the difference was significant. Each domain of HRQOL also showed the difference between uneducated and educated people. The Sazlina et al study also supported this result.

The study showed no significant difference in HRQOL scores among various occupational levels of people. There was also no much difference in QOL scores of various domains between working and not working people. This was also evidenced by the Sazlina et al study.

The duration of NCDs does not had any difference in HRQOL scores among the study population. When viewed the time line trend of duration of NCDS with the HRQOL scores, there was initially a declining trend, but with the increase in duration the HRQOL scores also had an upward trend. This indicates the people with NCDs during the passage of time get accommodated with the disease and tried to follow the advice given by the health care providers. In Sazlina et al study also, there was no difference in QOL scores with the duration of NCDs.

In Sazlina et al, the study showed decline in HRQOL score in people with co-morbidities compared with people with no co-morbidities. The present study also showed difference in HRQOL scores among people with complications and people without complications. The study also showed gradual decline in HRQOL scores with increase in complications or co-morbidities.

The predictors of lower HRQOL among people with NCDs determined in this study were urban residence, ($p = 0.045$), lower educational status ($p = 0.001$), people without diabetes ($p = 0.01$), people affected by neuropathy ($p = 0.036$), physical inactivity ($p = 0.049$), salt usage more than 5g per day ($p = 0.01$), consumption of deep fries and tubers ($p = 0.017$), inadequate

intake of fruits ($p = 0.007$) and increase in duration of interval of seeking health care provider ($p = 0.001$).

In Sazlina et al, the presence of co-morbid conditions was a predictor for lower HRQOL among people with NCDs but in the present study it was not a significant predictor. This is due to the reason that people with comorbidities and complications would have started following the proper lifestyle adaptations after they experienced with complications. This would have increased the quality of life in those people.

8. SUMMARY & CONCLUSION

A community based cross sectional survey was conducted among 344 people with Non Communicable Diseases of which 169 from rural area, Tirupattur and 175 from urban area, Chennai to compare the Health Related Quality Of Life (HRQOL) among people with NCDs in rural & urban Tamil Nadu.

A semi-structured pretested questionnaire was used to collect information regarding the socio-demographic details, metabolic risk factor values (anthropometry & clinical parameters), NCD disease status, health related behaviours and the quality of life of the people with NCDs. Those people who had been suffering from NCDs at least for past one year with age 30 years and above had been included for the study.

The study revealed the following findings:

1. The overall mean Health Related Quality of Life among rural people (47.78 ± 9.14) was higher compared to urban people (45.41 ± 9.57). The physical, psychological and social domains of HRQOL are higher in rural people whereas environmental domain of HRQOL is higher in urban people.
2. Regarding the metabolic risk factors, urban people had a better control of BMI and blood sugar levels over the past one year when compared to rural people. Considering blood pressure control, rural people had somewhat better control than urban people.

3. Regarding the NCD profile, Diabetes was more prevalent among rural people (55%) with NCDs and Hypertension was more prevalent among urban people (55%) with NCDs.
4. The complications of NCDs was more among urban people (55%) than rural people in the study population. The complication like neuropathy was significantly higher among rural people while co-morbidity like musculoskeletal disorder was more among urban people.
5. Regarding health related behaviours, physical activity and diet had a significant effect on the HRQOL. Urban population had more number of people with good physical activity than rural population. There was no significant difference in the diet patterns among rural and urban population. Addictions like smoking and hypertension had no influence on HRQOL.
6. Regarding health seeking behaviour, more number of urban people visited their healthcare provider less than one month regularly compared to rural people. The urban population also had a higher number of people taking drugs regularly compared to rural people.
7. The predictors of lower HRQOL were urban residence, lower educational status, complication of neuropathy, low physical activity, salt usage >5g per day, inadequate fruits consumption, consumption of deep fries and tubers and duration of interval of seeking healthcare > 1 month. (The linear regression model for HRQOL was able to explain 17 % of the observed variability in HRQOL scores).

9. LIMITATIONS

1. The study was done only among people with NCDs and there was no comparison made with people without NCDs.
2. The metabolic risk factor values were taken from their health records and not actually measured which could have measurement bias to some extent.
3. The complications are reported subjectively by the patients and not actually diagnosed which could have subject bias.
4. Participants may feign to give the real picture of their health related behaviours so as to project them a good image over their health pattern. This may lead to a possibility of bias in the study.
5. The cross sectional study has its own inherent limitations so that disabling to understand the temporal relationship between risk factors and the health related quality of life.

10. RECOMMENDATIONS

1. The Residence plays a significant role in the health related quality of life of people. Urban people have lower HRQOL than rural people. So health care facilities mainly NCD clinics must be improved and make reach the health services to the people properly in the urban areas.
2. There are some issues in making the healthcare reach the people like transportation difficulties and healthcare costs so that the people are not able to have a regular drug intake and regular screening. These issues can be addressed by the Government in the future.
3. Apart from the physical domain of health, psychological and social domains are also affected by NCDs. This can be improved by Community Health Programmes, recreational social activities and conducting community level sports programmes apart from regular treatments. This can be added as a component to the National Programme for Prevention of Cardio vascular diseases, Diabetes, Cancer and Stroke (NPCDCS).
4. Diet pattern of the people with NCDs was found to be not so good in accordance with the prescribed pattern and that was the major factor leading to worsening of the health and complications. So Nutritional Education must be done to improve their diet patterns.
5. Future studies can be done to analyse the factors in detail affecting the quality of life to get more understanding on the impact of NCDs on HRQOL.

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ANNEXURE 1

INFORMATION SHEET

"HEALTH RELATED BEHAVIOUR & QUALITY OF LIFE AMONG PEOPLE WITH NON COMMUNICABLE DISEASES IN RURAL & URBAN TAMIL NADU – A COMPARATIVE STUDY"

Non Communicable diseases (NCDs), also known as chronic diseases, are not passed from person to person. They are of long duration and generally slow progression. In this study, we focus on Diabetes & Cardiovascular diseases (includes Hypertension, Coronary Heart Disease & Stroke) as these diseases are more prevalent and more preventable. The study was intended to create awareness in the public that NCD can affect anyone and that it is a treatable condition. People should be aware of the risk factors of NCDs as it impacts not only the individuals but also their families. We request you to participate in this study.

In this study, we will be asking questions regarding your demographic profile, health related behaviours like physical activity, diet and addictions & quality of life. We will be getting your height, weight, blood pressure and blood glucose values from your health records (if available).

The privacy of the participants in the research will be maintained throughout the study. In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared.

Taking part in this study is voluntary. You are free to decide whether to participate in this study or to withdraw at any time. Your decision will not result in any loss of benefits to which you are otherwise entitled.

The results of the special study may be intimated to you at the end of the study period or during the study if anything is found abnormal which may aid in the management or treatment or prevention.

Signature of investigator

Signature or Thumb impression of the participant

INFORMED CONSENT FORM

"HEALTH RELATED BEHAVIOUR & QUALITY OF LIFE AMONG PEOPLE WITH NON COMMUNICABLE DISEASES IN RURAL & URBAN TAMILNADU – A COMPARATIVE STUDY"

Name of the participant: **Age/Sex:**

Study ID No: **Date:**

(1) I have been explained in detail about the study and its procedure. I confirm that I had completely understood the study and have had the opportunity to ask questions

(2) I understand that my participation in the study is voluntary and that I'm free to withdraw at any time, without giving any reason, without their medical care or legal rights being affected.

(3) I understand that the principal investigator, others working on the investigator's behalf, the Ethics Committee and the regulatory authorities will not need my permission to look at my health records both in respect of the current study and any further research that may be conducted in relation to it, even if I withdraw from the trial. I agree to this access. However I understand that my identity will not be revealed in any information released to third parties or published.

(4) I agree not to restrict the use of any data or results that arise from this study provided such a use is only for scientific purpose(s).

(5) I agree to my participation in the above study.

Signature of investigator **Signature or Thumb impression of the participant**

Date:

ஆய்வு தகவல் தாள்

தமிழகத்தின் கிராமப்புறம் மற்றும் நகர்ப்புறத்தில் உள்ள தொற்றா நோயுற்ற மக்களின் உடல் நலம் சார்ந்த பழக்கவழக்கங்கள் மற்றும் வாழ்க்கைத் தரம் – ஒரு ஒப்பீடு ஆய்வு

தொற்றா நோய்கள் அல்லது நாள்ப்பட்ட நோய்கள், ஒருவரிடாமிருந்து மற்றவர்க்கு பரவாது. இந்த நோய்கள் நீண்ட காலம் மற்றும் மெதுவான வளர்ச்சி கொண்டவை. இந்த ஆய்வில் சர்க்கரை நோய், இரத்த அழுத்தம் மற்றும் இருதய இரத்த நாளங்கள் சம்மந்தப்பட்ட நோய்களுக்கே முக்கியத்துவம் அளிக்கபடுகிறது. ஏனென்றால் இந்த நோய்களே அதிகம் பாதிக்ககூடியதும் தடுக்ககூடியதுமே. இந்த தொற்றா நோய்கள் யாரை வேண்டுமானாலும் பாதிக்ககூடியதும் குணப்படுத்தகூடியதுமே என்ற விழிப்புணர்வை மக்களிடம் கொண்டு செல்வதே இந்த ஆய்வின் நோக்கம். இந்த நோய்கள் அவர்களை மட்டும் அல்ல அவர்கள் குடும்பத்தாரையும் பாதிக்ககூடியது என்பதால் இந்த நோய்களின் அபாய காரணிகள் பற்றி மக்களிடம் விழிப்புணர்வு வேண்டும். நீங்கள் இந்த ஆய்வில் பங்கேற்க நாங்கள் விரும்புகிறோம்.

இந்த ஆய்வில் தங்களுடைய விவரம், உடல்நலம் சார்ந்த பழக்கவழக்கங்கள், வாழ்க்கைத் தரம் குறித்த கேள்விகள் கேட்கப்படும். உடல் அளவியளில் தங்களுடைய உயரம், எடை, இரத்த அழுத்தம் மற்றும் இரத்த சர்க்கரை அளவு சுகாதார பதிவுகளில் இருந்து எடுக்கப்படும்.

இந்த ஆய்வின் முடிவுகளை அல்லது கருத்துக்களை வெளியிடும் போதோ அல்லது ஆய்வின் போதோ தங்களது பெயரையோ அல்லது அடையாளங்களையோ வெளியிட மாட்டோம் என்பதையும் தெரிவித்துக்கொள்கிறோம்.

இந்த ஆய்வில் பங்கேற்பது தங்களுடைய விருப்பத்தில் பேரில் தான் இருக்கிறது. மேலும் நீங்கள் எந்நேரமும் இந்த ஆய்விலிருந்து வெளியேறலாம் என்பதையும் தெரிவித்துக்கொள்கிறோம்.

இந்த சிறப்பு பரிசோதனையின் முடிவுகளை ஆய்வின் பொது அல்லது ஆய்வின் முடிவின் போது தங்களுக்கு அறிவிப்போம் என்பதையும் தெரிவித்துக்கொள்கிறோம்.

ஆராய்ச்சியாளர் கையொப்பம் **பங்கேற்பாளர் கையொப்பம்**

ஆய்வு ஒப்புதல் கடிதம்

தமிழகத்தின் கிராமப்புறம் மற்றும் நகர்ப்புறத்தில் உள்ள தொற்றா நோயுற்ற மக்களின் உடல் நலம் சார்ந்த பழக்கவழக்கங்கள் மற்றும் வாழ்க்கைத் தரம் – ஒரு ஒப்பீடு ஆய்வு

பெயர்: **வயது:** **பால்:**

ஆய்வு சேர்க்கை எண்: **தேதி:**

1. இந்த ஆய்வின் விவரங்காலும் அதன் நோக்கங்களும் முழுமையாக எனக்கு தெளிவாக விளக்கப்பட்டது. எனக்கு விளக்கப்பட்ட விஷயங்களை நான் புரிந்து கொண்டு நான் எனது சமதத்தைத் தெரிவிக்கிறேன்.
2. இந்த ஆய்வில் பிறரின் நிர்பந்தமின்றி என் சொந்த விருப்பத்தின் பேரில் தான் பங்கு பெறுகிறேன் மற்றும் நான் இந்த ஆய்விலிருந்து எந்நேரமும் வெளியேறலாம் என்பதையும் அதனால் எந்த பாதிப்பும் ஏற்படாது என்பதையும் நான் புரிந்து கொண்டேன்.
3. இந்த ஆய்வின் விவரங்களை கொண்ட தகவல் தாளை பெற்றுக்கொண்டேன். நான் என்னுடைய சுயநினைவுடன் மற்றும் முழு சுதந்திரத்துடன் இந்த மருத்துவ ஆய்வில் என்னை சேர்த்துக்கொள்ள சம்மதிக்கிறேன்.
4. ஆய்வாளர் மற்றும் அவரை சார்ந்தவர்களோ நெரிமுறைக்குழு உருப்பினர்களோ நான் இந்த ஆய்விலிருந்து விலகினாலும் என்னுடைய அனுமதியின்றி எனது உடல்நிலை குறித்த தகவல்களை இந்த ஆய்விற்கோ இது தொடர்பான வேற ஆய்விற்கோ பயன்படுத்திக்கொள்ள முடியும் என்று புரிந்து கொண்டு சம்மதம் அளிக்கிறேன். ஆனாலும் எனது அடையாளம் வெளியிடப்பட மாட்டாது என்பதை புரிந்து கொள்கிறேன்.
5. இந்த ஆய்வின் தகவல்கலையும் முடிவுகளையும் அறிவியல் நோக்கத்திற்காக பயன்படுத்துவதற்கு நான் அனுமதிக்கிறேன். இந்த ஆய்வில் பங்குப்பெற நான் சம்மதிக்கிறேன்.

ஆராய்ச்சியாளர் கையொப்பம் **பங்கேற்பாளர் கையொப்பம்**

ANNEXURE 2

HEALTH RELATED BEHAVIOUR & QUALITY OF LIFE AMONG PEOPLE WITH NON COMMUNICABLE DISEASES IN RURAL & URBAN TAMIL NADU – A COMPARATIVE STUDY

SOCIO DEMOGRAPHIC DETAILS:

Name: _____

Age: _____ yrs **Sex:** ① Male ② Female ③ Others

Address: _____

_____

Religion: ① Hindu ② Muslim ③ Christian ④ Others

Marital Status:

① Unmarried ② Married (living with spouse) ③ Living separated

④ Divorced ⑤ Widowed

Educational status:

① Illiterate ② I-V ③ VI-X ④ XI-XII

⑤ Diploma ⑥ Degree ⑦ Others

Occupation:

① Not working ② Unskilled ③ Skilled ④ Farmer

⑤ Shop owner ⑥ Professional ⑦ Others

Family Type:

① Living Single ② Nuclear family ③ Joint family

Family monthly income: ₹_____ **Total Family Members:** _____

ANTHROPOMETRY & CLINICAL PARAMETERS:

Index	At present	12 months back	Index	At present	12 months back
Height			**BP**		
Weight			**FBS**		
BMI			**PPBS**		

MORBIDITY PROFILE:

Have you been suffering from the following diseases?

S No.	Disease	Yes /No	Taking Rx	Duration in years
1	Diabetes			
2	Hypertension			
3	Coronary Artery Disease			
4	Stroke			

Do you have any following complications?

① Retinopathy ② Nephropathy ③ Neuropathy

④ Myalgia/ Joint pain ⑤ Asthma / COPD ⑥ Others _____

HEALTH RELATED BEHAVIOURS:

1. Do you involve in exercise/ walking for at least 30 minutes a day apart from your normal work in the past 1 week?
   ① Yes ② No
2. If no, what is the reason for not exercising/ walking regularly?
   ① No time ② Laziness
   ③ Thinking not so important ④ Others specify..……

3. How much salt do you use for a whole day's diet?

   ① < 1 teaspoon ② >=1 teaspoon

4. In a typical week, how many days do you have at least one serving of fruits? ------- days

5. In a typical week, how many days do you have deep fried foods in your diet? ------- days

6. In a typical week, how many days do you have tuber foods in your diet? -------- days

7. Did you try to maintain your prescribed weight in past 12 months?

   ① Yes ② No

8. If no, what is the reason for not maintaining the desired weight?

   ① Not doing exercise ② Uncontrolled diet

   ③ Hormone problems/diseases ④ Others specify ..……..

9. Do you think that doing exercise/ walking will improve your health?

   ① Yes ② No

10. Do you think that making the prescribed changes in food choices will improve your health?

    ① Yes ② No

11. Did your health care provider advise you to increase exercise/ walking in past 12 months?

    ① Yes ② No

12. Did your health care provider advise you any change in your diet/ eating habits?

    ① Yes ② No

13. Do you smoke?

    ①Yes ② Stopped a year before

    ③ Stopped within past 12 months ④No

14. Do you think that stopping smoking will improve your health?

    ① Yes ② No ③ NA

15. Did your health care provider advise you to stop smoking in the past 12 months?

    ① Yes ② No ③ NA

16. Do you consume alcohol?

① No ② < 180ml per day ③ >=180 ml per day

④ Stopped a year before ⑤ Stopped within past 12 months

17. Do you think that reducing alcohol consumption will improve your health?

① Yes ② No

18. Did your health care provider advise you to reduce alcohol consumption in the past 12 months?

① Yes ② No

19. Do you think that obesity leads to diabetes and other cardiovascular diseases?

① Yes ② No

20. Did your health care provider advise you the appropriate weight for your height?

① Yes ② No

21. How frequently do you visit your health care provider?

① < 1 month ② 1 to 3 months ③ 3 to 6 months

④ 6 to 12 months ⑤ more than 1yr

22. How much does it cost per month for your health care? ₹.……

23. Do you take the prescribed medications regularly?

① Yes ② No

24. If no, what is the reason for not taking medications regularly?

① Side effects ② Cost issues

③ Transport issues ④ others specify …

WHOQOL-BREF

The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question to you, along with the response options. **Please choose the answer that appears most appropriate.** If you are unsure about which response to give to a question, the first response you think of is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life **in the last four weeks.**

		Very poor	Poor	Neither poor nor good	Good	Very good
1.	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2.	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about **how much** you have experienced certain things in the last four weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3.	To what extent do you feel that physical pain prevents you from doing what you need to do?	5	4	3	2	1
4.	How much do you need any medical treatment to function in your daily life?	5	4	3	2	1
5.	How much do you enjoy life?	1	2	3	4	5
6.	To what extent do you feel your life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
7.	How well are you able to concentrate?	1	2	3	4	5
8.	How safe do you feel in your daily life?	1	2	3	4	5
9.	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or were able to do certain things in the last four weeks.

		Not at all	A little	Moderately	Mostly	Completely
10.	Do you have enough energy for everyday life?	1	2	3	4	5
11.	Are you able to accept your bodily appearance?	1	2	3	4	5
12.	Have you enough money to meet your needs?	1	2	3	4	5
13.	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14.	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

		Very poor	Poor	Neither poor nor good	Good	Very good
15.	How well are you able to get around?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16.	How satisfied are you with your sleep?	1	2	3	4	5
17.	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18.	How satisfied are you with your capacity for work?	1	2	3	4	5
19.	How satisfied are you with yourself?	1	2	3	4	5

20.	How satisfied are you with your personal relationships?	1	2	3	4	5
21.	How satisfied are you with your sex life?	1	2	3	4	5
22.	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23.	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24.	How satisfied are you with your access to health services?	1	2	3	4	5
25.	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain things in the last four weeks.

		Never	Seldom	Quite often	Very often	Always
26.	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	5	4	3	2	1

Do you have any comments about the assessment?

_____

_____

[The following table should be completed after the interview is finished]

		Equations for computing domain scores	Raw score	Transformed scores*	
				4-20	0-100
27.	**Domain 1**	(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18 † + † + † + † + † + † + †	a. =	b:	c:
28.	**Domain 2**	Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26) † + † + † + † + † + †	a. =	b:	c:
29.	**Domain 3**	Q20 + Q21 + Q22 † + † + †	a. =	b:	c:
30.	**Domain 4**	Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25 † + † + † + † + † + † + † + †	a. =	b:	c:

தமிழகத்தின் கிராமப்புறம் மற்றும் நகர்ப்புறத்தில் உள்ள தொற்றா நோயுற்ற மக்களின் உடல் நலம் சார்ந்த பழக்கவழக்கங்கள் மற்றும் வாழ்க்கைத் தரம் – ஒரு ஒப்பீடு ஆய்வு

சமூக மக்கள் தொகை விவரம்:

பெயர்:
_____

வயது: _____ **பாலினம்:** □ ஆண் □ பெண் □மற்றவை

முகவரி: _____

_____

மதம்: ① இந்து ② இஸ்லாம் ③ கிறித்தவர் ④ மற்றவை

திருமணம்:

① ஆகவில்லை ② ஆகிவிட்டது ③ பிரிந்து வாழ்கிறேன்
④ விவாகரத்தானவர் ⑤ கணவன்/ மனைவி இறந்துவிட்டார்

கல்வித் தகுதி:

① படிக்கவில்லை ② I-V வகுப்பு ③ VI-X வகுப்பு ④ XI-XII வகுப்பு
⑤ பட்டய படிப்பு ⑥ பட்ட படிப்பு ⑦ மற்றவை _____

வேலைத் தகுதி:

① இல்லை ② திறமையற்ற வேலை ③ திறமையுள்ள வேலை
④ விவசாயம் ⑤ கடை வைத்திருப்பவர் ⑥ தொழில்முறை வேலை
⑦ மற்றவை _____

குடும்ப வகை:

① தனியாக இருக்கிறேன் ② தனி குடும்பம் ③ கூட்டு குடும்பம்

குடும்ப மாத வருமானம்: ₹_____ **குடும்ப மொத்த உறுப்பினர்கள்:** _____

உடல் அளவியல் விவரம்:

அளவீடு	தற்பொழுது	12 மாதம் முன்பு	அளவீடு	தற்பொழுது	12 மாதம் முன்பு
உயரம் (செமீ)			BP (mm/Hg)		
எடை (செமீ)			FBS (mg%)		
BMI			PPBS (mg%)		

நோயுற்ற விவரம்:

நீங்கள் கீழ்க்கண்ட ஏதேனும் நோய்களால் பாதிக்கபட்டுள்ளீர்களா?

எண்.	நோய்	ஆம்/ இல்லை	மருந்துகள் எடுக்கிறீர்களா	எத்தனை வருடங்கள்
1	சர்க்கரை நோய்			
2	இரத்த அழுத்தம்			
3	இருதய நோய்/ மாரடைப்பு			
4	பக்கவாதம்			

கீழ்க்கண்ட ஏதேனும் பாதிப்புகள் இருக்கிறதா?

① கண் விழித்திரை பாதிப்பு ② சிறுநீரக பாதிப்புகள்
③ நரம்பு பாதிப்புகள் ④ தசை எலும்பு பாதிப்புகள்
⑤ ஆஸ்துமா/ சுவாச பாதிப்புகள் ⑥ மற்றவை _____

உடல்நலம் சார்ந்த பழக்கவழக்கங்கள்:

1. கடந்த ஒரு வாரத்தில் உங்கள் தினசரி வேலைகள் தவிர குறைந்த பட்சம் 30 நிமிடங்களாவது உடற்பயிற்சி / நடைபயிற்சியில் ஈடுபட்டீர்களா?
   ① ஆம் ② இல்லை

2. அப்படி இல்லையெனில், உடற்பயிற்சி / நடைபயிற்சி செய்யாததற்கு காரணம் என்ன?
   ① நேரம் இல்லை ② சோம்பேறித்தனம் ③ முக்கியமில்லை
   ④ மற்றவை எனில் குறிப்பிடுக _____

3. ஒரு முழு நாள் சாப்பாட்டிற்கு எவ்வளவு உப்பு உபயோக்கிறீர்கள்?
   ① < 1 தே கரண்டி (tea spoon) ② >=1 தே கரண்டி (tea spoon)

4. கடந்த ஒரு வாரத்தில், எத்தனை நாட்கள் பழங்கள் உட்கொண்டீர்கள்? ___

5. கடந்த ஒரு வாரத்தில், எத்தனை நாட்கள் எண்ணையில் பொறித்த உணவுகளை சேர்த்துக்கொண்டீர்கள்? _____

6. கடந்த ஒரு வாரத்தில், எத்தனை நாட்கள் கிழங்கு வகை உணவுகளை சேர்த்துக்கொண்டீர்கள்? _____

7. கடந்த 12 மாதங்களில், உங்களுக்கு அறிவுறுத்தப்பட்ட எடையில் இருந்தீர்களா? ① ஆம் ② இல்லை ③ தெரியாது

8. அப்படி இல்லையெனில், குறிப்பிட்ட எடையில் இல்லாததற்கு காரணம் என்ன?
   ① உடற்பயிற்சியின்மை ② உணவு கட்டுப்பாடுயின்மை
   ③ ஹார்மோன் பிரச்சனைகள் ④ மற்றவை எனில் குறிப்பிடுக_____

9. உடற்பயிற்சி / நடைபயிற்சி செய்வது உங்களுடைய உடல் நலத்தை சீர்திருத்தும் என நினைக்கிறீர்களா? ① ஆம் ② இல்லை

10. உணவு வழக்க மாற்றங்கள் செய்வது உங்களுடைய உடல் நலத்தை சீர்திருத்தும் என நினைக்கிறீர்களா? ① ஆம் ② இல்லை

11. கடந்த 12 மாதங்களில், உங்களுடைய மருத்துவ உதவியாளர் உங்களுடைய உடற்பயிற்சி / நடைபயிற்சியை அதிகரிக்குமாறு அறிவுறுத்தினாரா? ① ஆம் ② இல்லை

12. கடந்த 12 மாதங்களில் உங்களுடைய மருத்துவ உதவியாளர் உங்களுடைய உணவு வழக்கங்களில் ஏதேனும் மாற்றம் அறிவுறுத்தினாரா?
   ① ஆம் ② இல்லை

13. நீங்கள் புகை பிடிப்பீர்களா?
   ① ஆம் ② ஒரு வருடத்திற்கு முன் நிறுத்திவிட்டேன்
   ③ கடந்த 12 மாதங்களில் நிறுத்தினேன் ④ இல்லை

14. உங்களுடைய மருத்துவ உதவியாளர் உங்களை புகை பிடிப்பதை தவிர்க்குமாறு அறிவுறுத்தினாரா?
   ① ஆம் ② இல்லை

15. புகை பிடிப்பதை நிறுத்துவது உங்களுடைய உடல் நலத்தை சீர்திருத்தும் என நினைக்கிறீர்களா?
   ① ஆம் ② இல்லை

16. நீங்கள் மது அருந்துவீர்களா?

① இல்லை ② தினம் < 180 மில்லி ③ தினம் > 180 மில்லி

④ ஒரு வருடத்திற்கு முன் நிறுத்திவிட்டேன்

⑤ கடந்த 12 மாதங்களில் நிறுத்தினேன்

17. கடந்த 12 மாதங்களில் உங்களுடைய மருத்துவ உதவியாளர் உங்களை மது அருந்துவதை நிறுத்துமாறு அறிவுறுத்தினாரா?

① ஆம் ② இல்லை

18. மது அருந்துவதை நிறுத்துவது உங்களுடைய உடல் நலத்தை சீர்திருத்தும் என நினைக்கிறீர்களா?

① ஆம் ② இல்லை

19. உடல் பருமன், சர்க்கரை மற்றும் இருதய நோய்களை உண்டாக்கும் என நினைக்கிறீர்களா ?

① ஆம் ② இல்லை

20. உங்களுடைய மருத்துவ உதவியாளர் உங்கள் உயரத்திற்கு ஏற்ற எடையை அறிவுறுத்தினாரா?

① ஆம் ② இல்லை

21. எவ்வளவு இடைவெளியில் உங்கள் மருத்துவ உதவியாளரை அணுகுகிறீர்கள்?

① < 1 மாதம் ② 1 to 3 மாதங்கள் ③ 3 to 6 மாதங்கள்

④ 6 to 12 மாதங்கள் ⑤ 1 வருடத்திற்கு மேல்

22. ஒரு மாதத்திற்கு உங்களுடைய மருத்துவச் செலவு எவ்வளவு ஆகிறது? ₹___

23. உங்களுக்கு அறிவுறுத்தப்பட்ட மருந்துகளை தவறாமல் உட்கொள்கிறீர்களா? ① ஆம் ② இல்லை

24. அப்படி இல்லையெனில், அறிவுறுத்தப்பட்ட மருந்துகளை எடுக்காததற்கு காரணம் என்ன?

① பக்க விளைவுகள் ② அதிக செலவு ③ போக்குவரத்து சிரமங்கள்

④ மற்றவை எனில் குறிப்பிடுக _____

World Health Organization

உலக சுகாதார நிறுவனம்

உங்களைப் பற்றிய சுய விவரம்

உங்களிடம் கேள்விகளை கேட்கும் முன்பாக உங்களைப் பற்றி அறிய விரும்புகின்றேன்.

சரியான பதிலை கொடுக்கப்பட்டுள்ள விடைகளில் இருந்து வட்டமிட்டு சுட்டி காட்டுக.

பாலினம் : ஆண் / பெண்

வயது :

கல்வி தகுதி : பள்ளிக்கு சென்றதில்லை / தொடக்கப் பள்ளி / நடுநிலைப் பள்ளி / மேல்நிலைப் பள்ளி

திருமணம் : ஆகவில்லை / ஆகிவிட்டது / சேர்ந்து வாழ்கின்றேன் / திருமணத்திற்குபின் பிரிந்து வாழ்கிறேன் / விவாகரத்தானவரா

கீழ்வரும் கேள்விகள் உங்களுடைய வாழ்க்கை தரக், நலம் போன்றவற்றை எவ்வாறு உணர்கின்றீர்க்ள் என்பதை பற்றியவையாகும். நான் கேள்விகளை ஒவ்வொன்றாக அதுனுடைய சில பதில்களுடன் உங்களை கேட்கிறேன் அதற்கு நீங்கள் சரியான பதிலை தேர்ந்தெடுக்கவும். இதில் சரியான விடையை / பதிலை தேர்ந்தெடுக்க குழப்பழ்மென்றால் முதலில் சரி என்று உங்களுக்கு தோன்றியதே சரியாந விடையாகும்.

கடந்த 4 வாரங்களில் உங்களுடைய வாழ்வின் மதிப்பு, எதிர்பார்ப்பு மற்றும் மனநிறைவு ஆகியவற்றை நினைவில் கொள்ளவும்.

		மிகவும் மோசம்	மோசம்	நன்றாக இல்லை மோசமாக இல்லை	நன்றாக உள்ளது	மிகவும் நன்றாக உள்ளது
1	உங்களுடைய வாழ்க்கையின் தரத்தை நீங்கள் எவ்வாறு மதிப்பிடுகிறீர்கள் ?	1	2	3	4	5

		மிகவும் மோசம்	மோசம்	நன்றாக இல்லை மோசமாக இல்லை	நன்றாக உள்ளது	மிகவும் நன்றாக உள்ளது
2	உங்களுடைய உடல் ஆரோக்கியம் எவ்வளவு திருப்திகரமாக உள்ளது?	1	2	3	4	5

கீழ்கண்ட வினாக்கள், நீங்கள் கடந்த 2 வாரங்களில், சில விஷயங்களில் அனுபவித்து வந்தீர்கள் (அனுபவம் உள்ளன) என்பதை பற்றி கேட்கின்றன.

		இல்லவே இல்லை	கொஞ் மளவு	மிதமான அளவு	அதிகமான அளவு	மிகவும் அதிகமான அளவு
3	எந்தளவிற்கு உடல் வலி நிங்கள் செய்ய வேண்டியவைகளிலி ருந்து உங்களை தடுக்கிறது ?	1	2	3	4	5
4	அன்றாட வாழ்வில் செயல்பட உங்களுக்கு எந்தளவிற்கு மருத்துவ உதவி தேயைவப்படுகிறது ?	1	2	3	4	5
5	வாழ்க்கையில் எந்தளவிற்கு சந்தோஷமாக உள்ளீர்கள் ?	1	2	3	4	5
6	உங்கள் வாழ்க்கை எந்தளவிற்கு அர்த்தமுள்ளதாக உணர்கிறீர்கள் ?	1	2	3	4	5
		இல்லவே இல்லை	கொஞ் மளவு	மிதமான அளவு	அதிகமான அளவு	மிகவும் அதிகமான அளவு
7	எந்தளவிற்கு நன்றாக உங்களால் கவனம் செலுத்த முடிகிறது?	1	2	3	4	5
8	உங்களுடைய அன்றாட வாழ்வில் எவ்வளவு பாதுகாப்பாக உணர்கிறீர்கள் ?	1	2	3	4	5
9	உங்கள் சுற்றுபுறம் எந்தளவு அரோக்கியமானதா க உள்ளது ?	1	2	3	4	5

கீழ்வரும் வினாக்க்ள், கடந்த இரண்டு வாரங்களில் நீங்கள் எவ்வளவு முழுமையாக அனுபவித்தீர்கள் அல்லது செய்ய முடிந்த சில காரியங்களை குறிப்பன.

		இல்லவே இல்லை	கொஞ் மளவு	மிதமான அளவு	அதிகமான அளவு	மிகவும் அதிகமான அளவு
10	தினசரி வாழ்க்கையில் உங்களுக்கு போதுமான அளவு சக்தி இருக்கிறதா ?	1	2	3	4	5
11	உங்கள் உடல் தோட்றத்தை உங்களால் ஏற்றுக் கொள்ள முடிகிறதா ?	1	2	3	4	5
12	உங்கள் தேவைகளை பூர்த்தி செய்ய உங்களிடத்தில் போதுமானளவு பணம் உள்ளதா ?	1	2	3	4	5
13	தினசரி வாழ்வில் உங்களுக்கு தேவையனா தகவல்கள் எவ்வளவு தூரம் கிடைக்கிறது ?	1	2	3	4	5
14	பொதுபோக்குகளில் ஈடுபட எந்த அளவிற்கு உங்களுக்கு வாய்ப்பு கிடைக்கிறது ?	1	2	3	4	5
15	எவ்வளவு நன்றாக உங்களால் அக்கம் பக்கத்தில் போய்வரமுடிகிறது ?	1	2	3	4	5

		இல்லவே இல்லை	கொஞ் மளவு	மிதமான அளவு	அதிகமான அளவு	மிகவும் அதிகமான அளவு
16	உங்கள் தூக்கம் எவ்வளவு திருப்திகரமாக உள்ளது ?	1	2	3	4	5
17	தினசரி செயல்களில் உங்களால் எவ்வளவு திருப்திகரமாக செயல்பட முடிகிறது ?	1	2	3	4	5
18	உங்கள் வேலைத்திறன் எவ்வளவு திருப்திகரமாக உள்ளது ?	1	2	3	4	5
19	உங்களைப்பற்றி நீங்கள் எவ்வளவு திருப்திகரமாக உள்ளீர்கள் ?	1	2	3	4	5

		இல்லவே இல்லை	கொஞ் மளவு	மிதமான அளவு	அதிகமான அளவு	மிகவும் அதிகமான அளவு
20	உங்கள் தனிப்பட்ட உறவுகள் குறித்து திருப்திகரமாக உள்ளீர்களா ?	1	2	3	4	5
21	உங்கள் தாம்பத்ய வாழ்க்கை எவ்வளவு திருப்திகரமாக உள்ளது ?	1	2	3	4	5
22	உங்கள் நண்பர்களிடம் இருந்து நீங்கள் பெறும் (உதவி) ஆதரவு எவ்வளவு திருப்திகரமாக உள்ளது ?	1	2	3	4	5
23	நீங்கள் வசிக்கும் இடத்தின் நிலை உங்களுக்கு எவ்வளவு திருப்திகரமாக உள்ளது ?	1	2	3	4	5
24	மருத்துவ வசதிகள் கிடைக்கபெறுவதில் நிங்கள் திருப்திகரமாக உணர்கிறீர்களா ?	1	2	3	4	5
25	உங்கள் போக்குவரத்து வசதி எவ்வளவு திருப்திகரமாக உள்ளது ?	1	2	3	4	5

		இல்லவே இல்லை	கொஞ் மளவு	மிதமான அளவு	அதிகமான அளவு	மிகவும் அதிகமான அளவு
26	எவ்வளவு எளிதில் நீங்கள் சோகம், விரக்தி மற்றும் மன அழுத்தம் போன்ற எதிர்மறை எண்ணங்களுக்கு உளளாகிறீர்கள் ?	1	2	3	4	5
27	இந்தப் படிவத்தை பூர்த்தி செய்ய யாராவது தங்களுக்கு உதவி செய்தார்களா ?	1	2	3	4	5

ANNEXURE 3

REVISION OF MODIFIED BG PRASAD SCALE

The BG Prasad scale was formulated in 1961 keeping the base of Consumer Price Index (CPI) for 1960 as 100. This was revised in 1982 by introducing a linking factor of 4.93 to convert CPI (1982) from the new base of 100 to the old base CPI (1960). Again a need was felt in 2001 to revise the base, which was done by introducing the linking factor of 4.63. These linking factors have been given by the Labour Bureau. To calculate the new income values, first we have to find out the current All India Consumer Price Index (AICPI) for industrial workers (IW; base 2001 = 100). Then we have to calculate the multiplication factor and new income value which is given by the following equation:

Multiplication factor = Current index value/base index value in 2001 (i.e., 100).
New income value = Multiplication factor × old income value × 4.63 × 4.93

Revised BG PRASAD Scale

AICPI for industrial workers = 261 (Jun 2015)

Multiplication factor = Current AICPI / base index value (2001) = 2.61

CLASS	SOCIO ECONOMIC STATUS	INCOME RANGE	NEW INCOME RANGE
I	**UPPER CLASS**	>= ₹ 100	>= ₹ 5958
II	UPPER MIDDLE CLASS	₹ 50 - ₹ 99	₹ 2979 - ₹ 5957
III	MIDDLE CLASS	₹ 30 - ₹ 49	₹ 1787 - ₹ 2978
IV	LOWER MIDDLE CLASS	₹ 15 - ₹ 29	₹ 894 - ₹ 1786
V	LOWER CLASS	< ₹ 15	< ₹ 894

ANNEXURE 4

SAMPLING FRAME

URBAN AREA – FIRST STAGE

S No.	CORPORATIONS	S No.	CORPORATIONS
1	CHENNAI	6	SALEM
2	MADURAI	7	TUTICORIN
3	COIMBATORE	8	VELLORE
4	TRICHY	9	TIRUPPUR
5	ERODE	10	TIRUNELVELI

URBAN AREA – SECOND STAGE

Zone No.	Name of the Zones	No. of Wards
I	THIRUVOTTIYUR	14
II	MANALI	7
III	MADHAVARAM	12
IV	TONDIARPET	15
V	ROYAPURAM	15
VI	THIRU-VI-KA-NAGAR	15
VII	AMBATTUR	15
VIII	ANNA NAGAR	15
IX	TEYNAMPET	18
X	KODAMBAKKAM	16
XI	VALASARAVAKKAM	13
XII	ALANDUR	12
XIII	ADYAR	13
XIV	PERUNGUDI	11
XV	SOZHINGANALLUR	9

URBAN AREA – THIRD STAGE

S. No.	CLUSTER	CLUSTER POPULATION	CUMULATIVE POPULATION	CLUSTERS SAMPLED
1	**VILLIVAKKAM**	80371	80371	39263
2	**VILLIVAKKAM 2**	70156	150527	115331
3	**NAGAMMAIYAR NAGAR**	50592	201119	191399
4	AYANAVARAM	58210	259329	
5	**PANNEER SELVAM NAGAR**	42360	301689	267467
6	**AMINJIKARAI WEST**	57072	358761	343535
7	SHENOY NAGAR	56422	415183	
8	**KILPAUK**	43675	458858	419603
9	**KMC**	51005	509863	495671
10	GANGADEESWARAR KOIL	31986	541849	
11	**PURASAIWAKKAM**	29920	571769	571739
12	MMDA COLONY	53072	624841	
13	**AMINJIKARAI EAST**	50081	674922	647807
14	CHETPET	35716	710638	
15	**MANGALAPURAM**	50038	760676	723875

RURAL AREA - FIRST STAGE

S.NO.	LIST OF HUDs	S.NO.	LIST OF HUDs
1	ARANTHANGI	22	PUDUKOTTAI
2	ARIYALUR	23	RAMANATHAPURAM
3	CHEYYAR	24	SAIDAPET
4	COIMBATORE	25	SALEM
5	CUDDALORE	26	SANKARANKOIL
6	DHARMAPURI	27	SIVAGANGA
7	DINDIGUL	28	SIVAKASI
8	ERODE	29	THANJAVUR
9	KALLAKURICHI	30	THE NILGIRIS
10	KANCHEEPURAM	31	THENI
11	KARUR	32	THIRUVALLUR
12	KOILPATTI	33	TIRUNELVELI
13	KRISHNAGIRI	34	TIRUPPATTUR
14	MADURAI	35	TIRUPPUR
15	NAGAPATTINAM	36	TIRUVANNAMALAI
16	NAGERCOIL	37	TIRUVARUR
17	NAMAKKAL	38	TRICHY
18	PALANI	39	TUTICORIN
19	PARAMAKUDI	40	VELLORE
20	PERAMBALUR	41	VILLUPURAM
21	POONAMALLEE	42	VIRUDHUNAGAR

RURAL AREA - SECOND STAGE

	BLOCKS IN TIRUPATTUR HUD	POPULATION		BLOCKS IN TIRUPATTUR HUD	POPULATION
1	K.V.KUPPAM	123402	6	GUDIYATHAM	174673
2	TIRUPATTUR	154094	7	JOLARPETTAI	183844
3	KANDILI	143933	8	NATRAMPALLI	100135
4	ALANGAYAM	139908	9	MADHANUR	106771
5	KATPADI	186216	10	PERNAMBATTU	246641

RURAL AREA - THIRD STAGE

S.No	CLUSTER	CLUSTER POPULATION	CUMULATIVE POPULATION	CLUSTER SAMPLED
1	**AGRAHARAM**	7151	7151	1435
2	VETTAPATTU	7180	14331	
3	**THIRIYALAM**	6505	20836	19820
4	MUKKANOOR	5901	26737	
5	KONAPATTU	6035	32772	
6	**KALNARSAMPATTI**	9181	41953	38205
7	CHINNAKAMIYAMPATTI	5693	47646	
8	EDAYAMPATTI	5697	53343	
9	**ELAGIRI VILLAGE**	5139	58482	56590
10	KODIYUR	11458	69940	
11	**KUDIYANAKUPPAM**	5700	75640	74975
12	NARAYANAPURAM	5789	81429	
13	ATHANAVOOR	4443	85872	
14	NILAVOOR	3120	88992	
15	**MALLAPALLI**	6541	95533	93360
16	VELAKKALNATHAM	8610	104143	
17	JAYAPURAM	7277	111420	
18	**CHANDRAPURAM**	7671	119091	111745
19	KETHANDAPATTI	6961	126052	
20	**CHINNA MOTTUR**	7152	133204	130130
21	C.KALLUPALLI	7185	140389	
22	**PONNERI**	11088	151477	148515
23	DAMALERIMUTHUR	6395	157872	
24	KATTERI	6978	164850	
25	**PACHAL**	18994	183844	

ANNEXURE 5

INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE, CHENNAI-3

EC Reg No.ECR/270/Inst./TN/2013
Telephone No. 044 25305301
Fax : 044 25363970

CERTIFICATE OF APPROVAL

To
Dr.Balaji S.M.
Postgraduate M.D.(Community Medicine)
Madras Medical College
Chennai 600 003

Dear Dr.Balaji S.M.

The Institutional Ethics Committee has considered your request and approved your study titled **"Health related behaviour and quality of life among people with non communicable diseases in rural and urban Tamil Nadu – A comparative study" No.04042015.**

The following members of Ethics Committee were present in the meeting held on 07.04.2015 conducted at Madras Medical College, Chennai-3.

1. Prof.C.Rajendran, M.D.,	: Chairperson
2. Prof.R.Vimala, M.D., Dean, MMC, Ch-3	: Deputy Chairperson
3. Prof.B.Kalaiselvi, M.D., Vice-Principal, MMC, Ch-3	: Member Secretary
4. Prof.B.Vasanthi, M.D., Prof. of Pharmacology, MMC	: Member
5. Prof.P.Ragumani, M.S., Professor of Surgery, MMC	: Member
6. Prof.S.Baby Vasumathi, Director, Inst. Of O&G, MMC	: Member
7. Prof.K.Ramadevi, Director, Inst.of Biochemistry, MMC	: Member
8. Prof.Saraswathy, M.D., Director, Pathology, MMC, Ch-3	: Member
9. Prof.K.Srinivasagalu, M.D.,Director, I.I.M. MMC, Ch-3	: Member
10.Thiru S.Rameshkumar, B.Com., MBA	: Lay Person
11.Thiru S.Govindasamy, B.A., B.L.,	: Lawyer
12.Tmt.Arnold Saulina, M.A., MSW.,	: Social Scientist

We approve the proposal to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study and SAE occurring in the course of the study, any changes in the protocol and patients information/informed consent and asks to be provided a copy of the final report.

Member Secretary, Ethics Committee
MEMBER SECRETARY
INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE

ANNEXURE 6

DEPARTMENT OF PUBLIC HEALTH AND PREVENTIVE MEDICINE

From
Dr.K.Kolandaswamy, MBBS, M.A.E,DPH,DIH,
Director of Public Health and
Preventive Medicine
359, Anna Salai
Chennai-600 006.

To
The Director,
Institute of Community Medicine,
Madras Medical College,
Chennai-600 003.

R.No. 027980/SBHI-II/S3/15 Dated:\5/05/15.

Sir,

Sub: Public Health and Preventive Medicine -SBHI- The Director, Institute of Community Medicine, Madras Medical College,Chennai-3 Requesting permission to Dr. Balaji S.M doing M.D.(Community Medicine) II year in his institute – permission to collect data for Project work "Health Related Behaviour and Quality of Life among people with NCDs in Rural and Urban Tamil Nadu- A comparative study in Tirupattur Health Unit District" -regarding.

Ref: Letter dated 30.03.2015 of The Director, Institute of Community Medicine, Madras Medical College, Chennai-600003
2. G.O.(D) No.648 Health and Family Welfare Department, Chennai-9. Dated 02/06/09.

With reference to the letter cited permission is accorded to Dr.Balaji S.M doing M.D.(Community Medicine) II year in Madras Medical College, Chennai-03 to conduct "A Study on Health Related Behaviour and Quality of Life among people with NCDs in Rural and Urban Tamil Nadu- A comparative study in Tirupattur Health Unit District".

With the following conditions:-

1. The data should be kept confidential and the report should not be published without the permission of the Government.

2. The Data should be used for the Project work only.

3. Study report should be submitted to the Director of Public Health and Preventive Medicine.

4. If there is any deviation in the above, action will be taken against the individual.

5. The study should not be detrimental to normal functioning of the Institution.

6. The views of the department should be obtained before finalizing the report for submission.

7. Progress of data collection should be appraised at each stage.

8. Study should have institutional ethics committee approval.

9. Consent form should be obtained from the study participant after giving the information sheet.

G. Suganya 18/5/15

For Director of Public Health and
Preventive medicine, Chennai – 6.

Copy to:
Deputy Director of Health Service, Tirupattur Health Unit District.

Copy to

1. Dr.Balaji S.M,
Community Medicine –II Year ,
Institute of Community Medicine,
Madras Medical College,Chennai-600 003.

ANNEXURE 7

From	To
The Deputy Commissioner (Health), Corporation of Chennai, Ripon Building, Chennai-600 003.	The Director, Institute of Community Medicine, Madras Medical College & RGGGH, Chennai-600 003.

P.H.D.C.No./988/2015 Dt: 18.02.2015

OFFICE OF THE CITY HEALTH OFFICER
27 FEB 2015
CORPORATION OF CHENNAI

Sub: Establishment – Corporation of Chennai - Public Health Department – Requisition from Institute of Community Medicine to conduct a study in selected slums of Chennai among People with NCDs – Permission – Requested – Regarding.

Ref: Letter from The Director, Institute of Community Medicine, Madras Medical College, dt. 11.02.2015.

As per the reference cited above, permission is granted for the student Dr. Balaji S.M. for conducting a study among people with NCDs in selected areas of Chennai for his dissertation titled **"Health Related Behaviour & Quality of Life among people with NCDs in rural & urban Tamil Nadu - A Comparative Study"** subject to the following conditions.

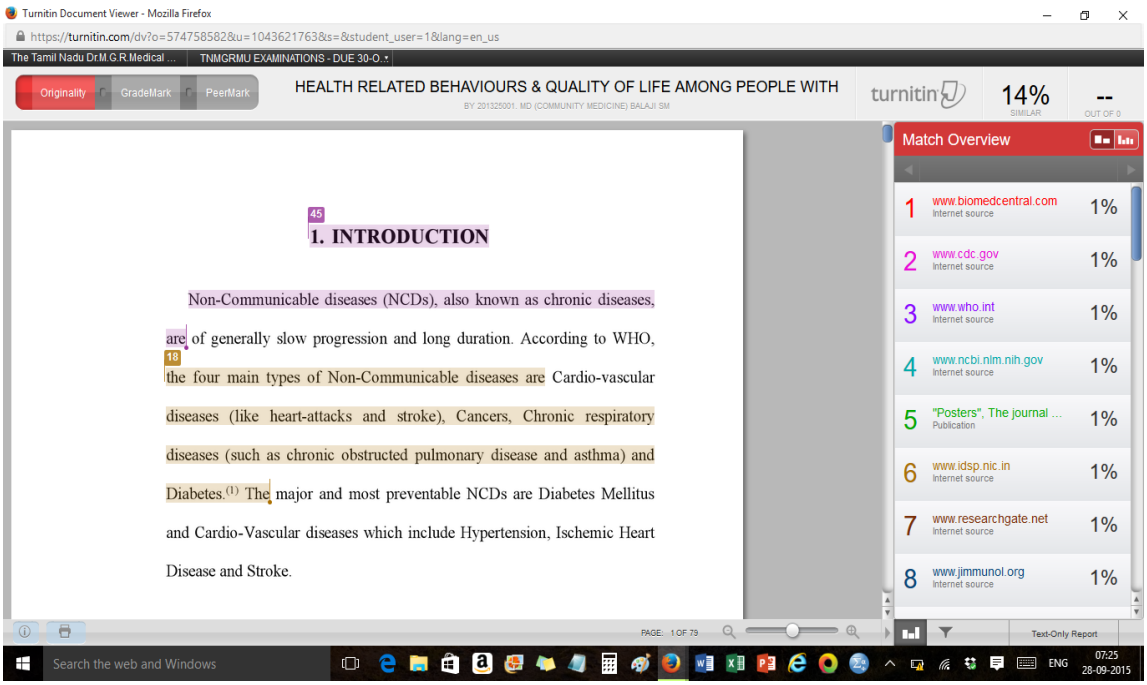
1. Corporation Name should be displaced in all publications and Corporation Health officials as Co-author.
2. Report should be well informed to officials of Public Health Department, Corporation of Chennai.
3. No negative reporting about Corporation of Chennai to be made.
4. The period of study as requested by the individual.

For Deputy Commissioner (Health) 3/3

24/2/15

ANNEXURE 8

PLAGIARISM CERTIFICATE



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ANNEXURE 9

KEY TO MASTER CHART

VARIABLE	LABEL	CODING
SEX	SEX OF THE INDIVIDUAL	1 – MALE, 2 – FEMALE, 3 – OTHERS
RES	RESIDENCE	1 – RURAL, 2 - URBAN
REL	**RELIGION**	1 – HINDU, 2 – MUSLIM, 3 – CHRISTIAN, 4 - OTHERS
MAR	MARITAL STATUS	1 – UNMARRIED, 2- MARRIED, 3 – SEPERATED, 4 – DIVORCED, 5 – WIDOWED
EDU	EDUCATIONAL STATUS	1 – NO FORMAL EDUCATION, 2 – PRIMARY, 3 – SECONDARY, 4 – HIGHER SECONDARY, 5 – DIPLOMA, 6 – DEGREE
OCC	OCCUPATION	1 – NOT WORKING, 2 – UNSKILLED, 3 – SKILLED, 4 – FARMER, 5 – SHOP OWNER, 6 – PROFESSIONAL
FT	FAMILY TYPE	1 - SINGLE, 2 – NUCLEAR, 3 - JOINT
INC	TOTAL INCOME OF THE FAMILY	
MEM	TOTAL MEMBERS IN THE FAMILY	
SES	SOCIO ECONOMIC STATUS (B.G.PRASAD SCALE)	1 – UPPER CLASS, 2 – UPPER MIDDLE, 3 – MIDDLE CLASS, 4 – LOWER MIDDLE,

		5 – LOWER CLASS
HTN	HEIGHT OF THE INDIVIDUAL AT PRESENT (cm)	
HT12	HEIGHT OF THE INDIVIDUAL 12 MONTHS BACK (cm)	
WTN	WEIGHT OF THE INDIVIDUAL AT PRESENT (Kg)	
WT12	WEIGHT OF THE INDIVIDUAL 12 MONTHS BACK (Kg)	
SYSN	SYSTOLIC PRESSURE AT PRESENT (mm Hg)	
DIAN	DIASTOLIC PRESSURE AT PRESENT (mm Hg)	
SYS12	SYSTOLIC PRESSURE AT PRESENT (mm Hg)	
DIA12	DIASTOLIC PRESSURE AT PRESENT (mm Hg)	
PSN	SYSTOLIC PRESSURE 12 MONTHS BACK (mm Hg)	
PS12	DIASTOLIC PRESSURE 12 MONTHS BACK (mm Hg)	
DM	DIABETES MELLITUS STATUS	1 – YES, 2 - NO
DMT	TREATMENT TAKEN FOR DIABETES MELLITUS	1 – YES, 2 - NO
DMY	TREATMENT DURATION FOR DIABETES MELLITUS (YEARS)	
HT	HYPERTENSION STATUS	1 – YES, 2 - NO
HTT	TREATMENT TAKEN FOR HYPERTENSION	1 – YES, 2 - NO
HTY	TREATMENT DURATION FOR HYPERTENSION (YEARS)	
CAD	CORONARY ARTERY DISEASE STATUS	1 – YES, 2 - NO
CADT	TREATMENT TAKEN FOR CAD	1 – YES, 2 - NO
CADY	TREATMENT DURATION FOR CAD (YEARS)	
STR	STROKE STATUS	1 – YES, 2 - NO
STRT	TREATMENT TAKEN FOR STROKE	1 – YES, 2 - NO
STRY	TREATMENT DURATION FOR STROKE (YEARS)	
C1	RETINOPATHY	1 – YES, 2 - NO
C2	NEPHROPATHY	1 – YES, 2 - NO
C3	NEUROPATHY	1 – YES, 2 - NO
C4	MUSCULO SKELETAL	1 – YES, 2 - NO

	DISORDER	
C5	ASTHMA / COPD	1 – YES, 2 - NO
C6	OTHER COMPLICATIONS	1 – YES, 2 - NO
K1	PRACTICE OF PHYSICAL ACTIVITY	1 – YES, 2 - NO
K2	REASON FOR NOT DOING PHYSICAL ACTIVITY	1 – NO TIME, 2 – LAZINESS, 3 – NOT IMPORTANT, 4 – OTHERS
K3	SALT USAGE FOR PER DAY DIET	1 - <5g/day, 2 - >5g/day
K4	NO. OF DAYS OF FRUITS CONSUMPTION PER WEEK	
K5	NO. OF DAYS OF DEEP FRIES CONSUMPTION PER WEEK	
K6	NO. OF DAYS OF TUBERS CONSUMPTION PER WEEK	
K7	MAINTAINED ADVISED WEIGHT IN PAST 1 YEAR	1 – YES, 2 – NO, 3 – DON'T KNOW
K8	REASON FOR NOT MAINTAINING THE WEIGHT	1 – LOW PHYSICAL ACTIVITY, 2 – DIET, 3 – HORMONE PROBLEMS, 4 - OTHERS
K9	ATTITUDE TOWARDS PHYSICAL ACTIVITY IMPROVES HEALTH	1 – YES, 2 - NO
K10	ATTITUDE TOWARDS DIET PATTERN IMPROVES HEALTH	1 – YES, 2 - NO
K11	KNOWEDGE REGARDING PHYSICAL ACTIVITY	1 – YES, 2 - NO
K12	KNOWLEDGE REGARDING DIET PATTERNS	1 – YES, 2 - NO
K13	**SMOKING**	1 – YES, 2 – STOPPED 1YR BACK, 3 – STOPPED IN PAST 1 YR, 4 - NO
K14	KNOWLEDGE ABOUT ILL EFFECTS OF SMOKING	1 – YES, 2 - NO
K15	ATTITUDE ABOUT STOPPING SMOKING	1 – YES, 2 - NO
K16	ALCOHOL DRINKING	1 – NO, 2 – DAILY < 180ml,

		3- DAILY >180ml, 4 - STOPPED 1 YR BACK, 5 – STOPPED IN PAST 1 YR
K17	KNOWLEDGE REGARDING ILL EFFECTS OF DRINKING	1 – YES, 2 - NO
K18	ATTITUDE TOWARDS CESSATION OF DRINKING	1 – YES, 2 - NO
K19	ATTITUDE TOWARDS OBESITY	1 – YES, 2 - NO
K20	KNOWLEDGE ABOUT APPROPRIATE WEIGHT	1 – YES, 2 - NO
K21	HEALTH CARE SEEKING INTERVAL DURATION	1 - < 1 MONTH, 2 – 1 TO 3 MONTHS, 3 – 3 TO 6 MONTHS, 4 – 6 TO 12 MONTHS, 5 - >1 YR
K22	MEDICAL EXPENSES PER MONTH (Rs.)	
K23	TAKING DRUGS REGULARLY	1 – YES, 2 - NO
K24	REASON FOR NOT TAKING DRUGS REGULARLY	1 – SIDE EFFECTS, 2 – MORE EXPENSES, 3 – TRANSPORT DIFFICULTIES, 4 - OTHERS
Q1 – Q26	QUESTIONS ON HRQOL	5 POINT LIKERT SCALE
	(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18	PHYSICAL DOMAIN
	Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26)	PSYCHOLOGICAL DOMAIN
	Q20 + Q21 + Q22	SOCIAL DOMAIN
	Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25	ENVIRONMENTAL DOMAIN

ANNEXURE 10

S.No	NAME	AGE	SEX	RES	REL	MAR	EDU	OCC	FT	INC	MEM	SES	HTN	HT12	WTN	WT12	SYSN	DIAN	SYS12	DIA12	FSN	FS12	PSN	PS12	DM	DMT	DMY	HT	HTT	HTY	CAD	CADT	CADY	STR	STRT	STRY	C1	C2	C3	C4
1	NATARAJAN	60	1	1	1	2	3	4	2	1000	2	5	160	160	72	70	130	90	190	110	92	104	184	384	1	1	12	1	1	1	2	-	-	2	-	-	2	2	2	2
2	AMARAVATHI	70	2	1	1	2	1	2	1	1000	1	4	142	142	53	50	140	90	170	110	90	74	180	256	1	1	13	1	1	6	2	-	-	2	-	-	1	2	2	2
3	PUSHPA	48	2	1	1	2	1	4	2	4000	5	5	152	-	65	-	130	70	-	-	102	-	162	-	1	2	2	1	2	2	2	-	-	2	-	-	2	2	2	2
4	VENKATESH	65	1	1	1	2	1	4	2	3000	5	5	156	-	60	-	140	70	-	-	-	-	102	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
5	SARAVANAN	45	1	1	1	2	4	3	2	4000	5	5	156	156	57	64	100	70	110	70	143	98	268	164	1	1	3	2	-	-	2	-	-	2	-	-	1	2	2	2
6	RAJAMMAL	75	2	1	1	5	1	2	2	3000	2	4	161	161	62	68	140	80	130	90	106	365	194	-	1	1	2	2	-	-	2	-	-	2	-	-	2	2	2	2
7	MANOHARAN	59	1	1	1	2	3	3	2	7000	6	4	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	-	-	2	-	-	2	-	-	1	2	2	2
8	AROCKIATHAS	59	1	1	3	5	3	3	3	7000	6	4	-	-	-	-	150	80	140	90	98	95	116	121	2	-	-	1	1	1	2	-	-	2	-	-	1	2	2	2
9	GOVINDASAMY	49	1	1	1	2	3	1	2	2000	3	5	165	165	56	-	120	70	-	-	86	-	115	-	2	-	-	1	1	2	2	-	-	2	-	-	1	2	2	2
10	VENNILA	35	2	1	1	5	4	1	2	7000	3	3	143	-	48	-	130	70	-	-	45	-	292	-	1	2	2	2	-	-	2	-	-	2	-	-	2	2	2	2
11	VINOTH	30	1	1	1	1	6	3	3	4000	4	4	174	174	-	-	120	80	110	70	96	126	114	142	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
12	CHINNAKALI	70	1	1	1	2	1	4	2	6000	3	3	153	153	63	50	150	96	130	70	140	164	270	179	1	1	3	1	1	2	2	-	-	2	-	-	2	2	2	2
13	PANNEER SELVAM	67	1	1	1	2	2	3	2	5500	3	3	153	153	55	50	110	60	110	60	210	194	330	180	1	1	3	2	-	-	2	-	-	2	-	-	1	2	2	2
14	RAMASAMI	58	1	1	1	2	1	4	2	6000	6	4	150	150	64	61	140	90	110	70	190	139	270	204	1	1	1	1	1	1	2	-	-	2	-	-	1	2	2	2
15	KAALI	62	1	1	1	2	1	2	2	7000	4	4	151	151	59	51	110	60	120	70	130	104	214	109	1	1	4	2	-	-	2	-	-	2	-	-	1	2	2	2
16	KAALIAMMA	45	2	1	1	2	2	2	2	6000	6	4	149	149	52	50	130	80	120	70	140	97	239	144	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
17	VALLIAMMA	50	2	1	1	2	1	2	2	6000	3	3	153	153	60	57	130	80	100	70	160	147	294	180	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
20	PERUMAL	51	1	1	1	2	1	6	2	6000	2	2	156	156	49	53	130	86	110	70	144	139	197	180	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	1
21	KALI	70	1	1	1	2	2	2	2	2500	1	3	149	149	56	53	130	60	110	60	184	127	257	160	1	1	1	2	-	-	2	-	-	2	-	-	1	2	2	2
24	UMADEVI	50	2	1	1	2	3	1	3	60000	4	1	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
26	KALA	37	2	1	1	2	1	1	2	4000	2	3	-	-	-	-	110	60	120	80	115	110	189	174	1	1	3	1	1	3	2	-	-	2	-	-	2	2	2	2
27	VALARMATHI	55	2	1	1	2	1	2	2	5000	4	4	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
28	SOMASUNDARAM	56	1	1	1	2	3	3	2	4000	6	5	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
29	KUPPU	45	2	1	1	2	1	1	2	6000	4	4	152	152	61	62	120	80	110	70	89	192	126	296	1	1	3	1	1	3	2	-	-	2	-	-	2	2	2	2
30	SENTHILKUMAR	41	1	1	1	2	3	3	2	4000	4	4	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	-	-	2	-	-	2	-	-	2	2	2	2

| | | |

62	MURUGESAN	68	1	1	1	2	1	2	2	3000	2	4	-	-	-	-	-	-	-	-	-	-	-	-	1	1	25	1	1	25	1	1	4	2	-	-	1	2	1	2
63	THAVAMANI	56	2	1	1	5	1	2	1	5000	1	2	152	152	63	68	160	100	130	80	102	96	294	218	1	1	3	1	1	2	2	-	-	2	-	-	1	2	1	2
64	KAMATCHI	56	2	1	1	2	6	3	2	50000	3	1	150	150	61	70	140	90	180	100	90	130	218	416	1	1	10	1	1	5	1	1	1	2	-	-	1	1	2	2
65	KUPPAN	47	1	1	1	2	2	3	3	10000	12	5	160	160	65	71	100	70	120	80	-	76	-	121	1	1	2	2	-	-	2	-	-	2	-	-	2	2	2	1
66	CHITRA	35	2	1	1	2	3	1	2	4000	4	4	154	154	56	64	120	80	120	80	110	-	136	-	1	1	2	2	-	-	2	-	-	2	-	-	2	2	2	2
67	CHINNAPPAN	60	1	1	1	2	2	2	2	3000	3	4	160	160	54	60	120	70	130	90	98	-	198	-	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
68	UBEDHA	62	1	1	2	2	3	5	2	8000	12	5	148	148	42	52	130	80	150	100	98	93	-	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
69	SANTHI	46	2	1	1	2	2	1	3	8000	7	4	152	152	56	58	120	70	130	80	106	98	-	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
70	SULOCHANA	60	2	1	1	5	1	4	2	1000	2	5	154	154	65	68	120	80	150	100	94	93	-	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
71	VALLI	48	2	1	1	2	1	4	3	5000	6	5	163	-	55	-	130	80	160	100	76	102	109	116	2	-	-	1	1	2	2	-	-	2	-	-	1	2	2	2
72	TAMILSELVI	52	2	1	1	2	5	4	2	10000	2	2	163	-	57	-	130	90	-	-	89	-	124	-	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
73	NATARAJAN	58	1	1	1	2	5	4	2	24000	3	1	165	-	56	-	140	90	-	-	98	-	136	-	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
74	ANWAR BASHA	65	1	1	2	2	1	1	3	7000	6	4	-	-	-	-	110	70	160	70	129	92	217	164	1	1	3	1	1	3	2	-	-	2	-	-	2	2	2	2
75	RAJAMANIKAM	58	1	1	1	2	6	4	3	24000	4	1	175	-	45	-	160	90	-	-	94	-	116	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
76	KAVERI	40	2	1	1	2	1	3	2	4000	4	4	160	160	60	63	134	86	148	90	98	130	226	320	1	1	2	1	1	2	2	-	-	2	-	-	2	2	2	2
77	VENKATESAN	49	1	1	1	2	4	3	2	12000	5	3	169	169	82	86	150	80	120	90	170	117	295	160	1	1	2	1	1	2	2	-	-	2	-	-	2	2	2	2
78	MARAGATHAM	42	2	1	1	2	3	3	2	6000	3	3	162	162	64	73	110	60	140	70	94	100	230	270	1	1	2	2	-	-	2	-	-	2	-	-	2	2	2	2
79	VASANTHA	45	2	1	1	2	2	6	2	3000	3	4	151	151	60	63	100	70	114	80	100	130	230	320	1	1	2	2	-	-	2	-	-	2	-	-	2	2	2	2
80	JAYALAKSHMI	45	2	1	1	2	1	4	2	3000	6	5	158	158	61	59	100	60	110	70	94	180	207	294	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
81	RADHIKA	37	2	1	1	2	3	1	2	5000	4	4	155	155	72	76	120	70	110	78	96	110	254	236	1	1	2	2	-	-	2	-	-	2	-	-	2	2	2	2
82	SUMATHI	40	2	1	1	2	3	2	2	4500	5	4	149	149	48	46	110	60	114	72	120	140	284	290	1	1	2	2	-	-	2	-	-	2	-	-	2	2	2	2
83	LOGANATHAN	36	1	1	1	2	3	4	2	4000	5	5	164	164	69	71	140	74	150	94	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
84	RAMALINGAM	49	1	1	1	2	4	4	2	5000	6	5	170	170	66	69	130	80	120	80	100	97	196	174	1	1	2	2	-	-	2	-	-	2	-	-	2	2	2	2
85	VENAKTESAN	42	1	1	1	2	1	3	2	3000	4	5	164	164	50	59	114	78	130	80	110	180	236	370	1	1	1	2	-	-	2	-	-	2	-	-	1	2	2	2
87	MARKABANELLU	52	1	1	1	2	4	1	3	15000	8	3	160	160	81	85	120	70	180	90	94	123	140	149	1	1	2	1	1	2	2	-	-	2	-	-	1	2	2	2
88	KESAVAN	56	1	1	1	2	3	1	3	10000	9	4	156	156	63	78	110	70	110	70	-	-	-	-	1	1	1	2	-	-	2	-	-	2	-	-	1	2	2	2
89	GOVINDAMMAL	52	2	1	1	2	1	1	2	1000	5	5	-	-	45	40	110	70	160	110	-	-	-	-	2	-	-	1	1	2	2	-	-	2	-	-	1	2	2	2
90	BANUMATHI	40	2	1	1	2	3	1	2	3000	3	4	156	156	56	56	130	70	160	100	72	-	103	-	2	-	-	1	1	1	2	-	-	2	-	-	1	2	2	2
91	SHANJA	32	2	1	2	2	2	1	2	3000	4	5	152	152	48	50	120	60	110	70	118	-	198	-	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2

92	MALLIGA	55	2	1	1	2	3	4	2	3000	4	5	160	160	60	68	120	80	150	90	-	-	-	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	1
93	SEKAR	48	1	1	1	2	1	1	2	2000	4	5	156	156	58	69	120	60	-	-	-	182	-	206	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
94	ASOKAN	46	1	1	1	1	2	3	1	1000	1	4	173	173	70	80	170	90	140	90	89	89	192	185	2	-	-	1	1	2	2	-	-	2	-	-	1	2	2	2
95	KUMAR	51	1	1	3	2	3	3	2	5000	3	4	162	162	52	58	120	80	-	-	152	-	193	-	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
96	SHANTHA	62	2	1	1	5	1	1	2	12000	5	3	143	143	43	45	150	90	150	100	89	89	293	243	1	1	5	1	1	1	2	-	-	2	-	-	1	2	2	1
97	GAJENDRAN	70	1	1	1	2	2	4	2	6000	3	3	168	168	70	70	140	90	170	100	91	81	143	160	2	-	-	1	1	2	2	-	-	2	-	-	1	2	2	2
98	MEERA	65	2	1	1	2	1	1	2	3000	3	4	147	147	55	56	140	70	140	100	85	75	273	235	1	1	2	1	1	2	2	-	-	2	-	-	1	2	2	2
100	KESAVAN	37	1	1	1	2	3	3	3	5000	9	5	168	168	77	77	130	90	120	80	108	148	203	279	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
101	GIRIJA	65	2	1	1	2	1	1	3	1000	4	5	158	158	71	72	150	90	170	90	136	156	263	303	1	1	2	1	1	2	2	-	-	2	-	-	2	2	2	2
102	JAYASEELAN	40	1	1	1	2	3	3	2	5000	4	4	160	160	74	74	100	60	120	80	78	149	136	273	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
103	PROTHOSH	34	2	1	2	2	2	1	2	6000	5	4	152	152	76	70	100	60	120	80	139	199	264	402	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
104	CHITTI BABU	51	1	1	1	2	2	3	2	2000	5	5	160	160	70	70	100	60	120	90	171	129	276	206	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
105	MUNEES	60	1	1	2	2	1	1	3	1000	5	5	158	158	62	68	130	90	150	90	144	145	216	293	1	1	2	1	1	2	2	-	-	2	-	-	2	2	2	2
107	SELVI	48	2	1	3	2	1	1	3	1000	6	5	154	154	69	70	100	60	130	80	176	209	206	315	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
108	GOVINDASAMY	65	1	1	1	2	1	1	3	1000	6	5	168	168	52	52	140	90	150	90	114	152	239	245	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
109	MUJIB	37	1	1	2	2	1	3	2	1000	4	5	158	158	69	69	130	90	140	90	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
110	RAMPRAKASH	35	1	1	1	2	6	3	2	7000	4	4	155	155	79	82	110	70	120	80	172	192	220	263	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
111	SANJEEVI	54	1	1	1	2	3	4	2	5000	4	4	155	155	76	86	110	70	100	60	-	128	-	240	1	1	1	2	-	-	2	-	-	2	-	-	1	2	2	2
112	MURUGAN	61	1	1	1	2	3	3	2	3000	5	5	147	147	51	56	120	80	150	100	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	1	2	2	2
113	JEYALAKSHMI	55	2	1	1	2	2	1	2	2000	4	5	150	150	55	58	120	80	150	90	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	1	2	2	2
114	KUZHANTHAI	58	1	1	1	2	1	4	2	4000	3	4	160	160	52	60	130	80	130	90	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	1	2	2	2
115	MANGAI	50	2	1	1	2	1	2	3	2000	2	4	150	150	53	55	130	80	146	90	112	-	150	-	2	-	-	1	1	1	2	-	-	2	-	-	1	2	2	2
116	SUBRAMANI	56	1	1	1	2	2	2	2	4000	3	4	155	155	54	59	162	90	190	86	87	-	142	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	1	2
117	PANNEER	45	1	1	1	2	1	2	2	6000	4	4	155	155	65	68	120	80	140	90	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
118	KOURAMBA	51	2	1	1	2	2	2	2	3000	2	4	145	145	45	48	120	80	150	90	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
119	VIJAYALAKSHMI	45	2	1	1	2	3	1	2	1000	4	5	155	155	59	63	122	80	150	90	79	-	184	-	2	-	-	1	1	1	2	-	-	2	-	-	1	2	2	2
120	DEVARAJ	57	1	1	1	5	3	5	3	10000	5	3	164	164	62	-	110	70	120	80	-	133	301	186	1	1	5	1	1	5	2	-	-	2	-	-	2	2	2	1
121	ARPUTHAM	45	2	1	1	2	3	3	3	10000	5	3	163	-	74	-	110	70	-	-	140	-	250	-	1	1	10	2	-	-	2	-	-	2	-	-	1	2	2	2
122	NAVANEETHAM	50	2	1	1	2	2	4	3	2000	2	4	148	-	58	-	140	80	-	-	90	-	116	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2

| | | |

153	KASIYAMMAL	58	2	1	1	2	1	1	1	900	3	5	154	154	68	74	120	70	180	90	-	-	-	-	1	1	2	1	1	2	2	-	-	2	-	-	1	2	2	2
154	AMBIKA	55	2	1	1	2	1	1	3	600	6	5	150	150	57	50	170	100	140	100	90	86	108	109	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
155	CHINNATHAI	45	2	1	1	2	1	3	2	900	5	5	153	-	70	-	130	80	-	-	-	-	128	-	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
156	RAMAN	65	1	1	1	2	3	1	2	600	2	5	158	158	56	62	120	70	160	70	92	116	110	124	1	1	3	1	1	3	1	1	3	2	-	-	2	2	2	2
157	MANI	50	1	1	1	2	2	6	2	4500	3	4	159	159	40	42	140	80	160	80	-	-	-	-	2	-	-	1	1	3	2	-	-	2	-	-	2	1	2	2
160	SARASWATHI	65	2	1	1	2	3	1	3	5000	5	4	162	162	54	65	130	90	190	110	96	96	316	412	1	1	1	1	1	4	1	1	1	2	-	-	1	2	2	2
161	KASTHURI	36	2	1	1	2	3	2	2	5000	6	5	152	152	55	53	100	60	110	70	160	96	374	292	1	1	3	2	-	-	2	-	-	2	-	-	2	1	2	2
162	RAMADOSS	52	1	1	1	2	2	3	2	1000	5	5	172	-	81	84	150	100	160	100	86	132	206	285	1	1	5	1	1	4	2	-	-	2	-	-	2	2	2	1
163	GOVINDAMMA	60	2	1	1	2	1	1	2	1000	2	5	161	-	68	72	110	70	140	90	-	-	-	-	2	-	-	1	1	5	2	-	-	2	-	-	2	2	1	2
164	MURUGAN	57	1	1	1	2	4	3	2	8000	9	5	160	160	56	62	130	90	130	90	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
165	THAMBIDURAI	58	1	1	1	2	3	4	2	5000	5	4	-	-	65	64	120	70	120	70	-	164	-	163	2	-	-	1	1	3	2	-	-	2	-	-	2	2	2	2
166	SAVITHIRI	42	2	1	1	2	1	2	2	3500	3	4	166	166	68	70	120	70	120	70	111	182	164	280	1	1	2	2	-	-	2	-	-	2	-	-	2	2	1	2
167	AMMU	34	2	1	1	2	4	2	2	3000	4	5	158	158	68	69	130	80	140	90	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
168	MANOGRAMA	40	2	1	3	2	1	2	2	3000	3	4	162	162	50	51	110	70	160	100	90	94	140	160	2	-	-	1	1	1	2	-	-	2	-	-	1	2	2	2
169	SUGUNA	42	2	1	1	2	4	1	2	4000	4	4	161	161	60	61	130	70	150	100	104	-	130	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
170	VASANTHAMMA	45	2	1	1	2	2	2	3	5000	6	5	152	152	62	66	130	80	160	100	110	210	190	370	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	1
171	NAGA	43	1	1	1	2	1	2	3	4000	6	5	152	152	61	61	110	70	130	90	113	101	156	198	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
172	KRISHNAVENI	70	2	1	1	2	4	1	2	2000	6	5	166	166	56	55	130	70	160	100	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
173	VELLAIYAN	52	1	1	1	2	2	2	2	3000	3	4	156	156	65	65	120	80	150	90	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
174	BALU	45	1	1	1	2	2	2	2	3000	4	5	170	170	80	76	100	70	110	78	92	98	203	114	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
175	KANNU	60	1	1	1	2	3	2	3	3000	6	5	174	174	58	58	150	80	110	70	78	-	108	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	1	2
176	JEYARAMAN	56	1	1	1	2	3	2	2	4000	4	4	162	162	53	49	140	90	140	90	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
177	CHINNARAJ	60	1	1	1	2	1	2	2	500	2	5	170	170	67	66	140	90	170	100	107	-	127	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
178	KALA	43	2	1	1	3	3	2	2	2000	5	5	165	165	87	80	150	90	170	80	-	79	-	147	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
179	MALLIGA	48	2	1	1	2	1	2	2	5000	2	3	158	158	65	68	120	80	130	80	83	125	143	225	1	1	1	1	1	10	2	-	-	2	-	-	2	2	2	2
180	LAKSHMI	55	2	1	1	2	2	2	3	1000	13	5	153	153	54	54	110	70	110	70	143	112	132	174	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
181	JEGATHAMMAL	50	2	1	1	2	1	2	1	500	7	5	165	165	56	56	110	70	120	80	114	75	173	143	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
182	SARINAB	30	2	1	2	2	1	2	2	5000	7	5	158	158	89	84	120	90	140	100	125	-	139	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
183	KALIL	55	1	2	2	2	1	3	3	10000	5	3	151	151	69	73	100	60	110	70	117	118	198	212	1	1	3	2	-	-	2	-	-	2	-	-	2	2	2	2

184	MAHENDRAN	51	1	2	1	2	2	6	2	15000	5	2	150	150	67	78	140	90	150	90	-	-	-	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
185	LAKSHMANAN	37	1	2	1	2	1	4	2	5000	4	4	152	152	61	65	110	70	120	80	108	108	197	208	1	1	3	2	-	-	2	-	-	2	-	-	2	2	2	2
186	VARALAKSHMI	52	2	2	1	2	1	1	2	3000	4	5	168	168	74	-	140	90	190	100	-	-	-	-	2	-	-	1	1	3	2	-	-	2	-	-	2	2	2	2
187	AABITHA	50	2	2	2	2	2	1	3	15000	6	3	156	156	59	65	110	70	120	80	105	121	194	251	1	1	2	2	-	-	2	-	-	2	-	-	2	2	2	2
188	SANTHI	49	2	2	1	2	2	1	2	5000	3	4	158	-	60	-	110	70	100	70	165	117	195	202	1	1	5	2	-	-	2	-	-	2	-	-	2	2	1	2
189	KOTEESWARI	45	2	2	1	2	2	1	2	2000	3	5	150	150	67	72	150	90	170	90	91	75	117	131	2	-	-	1	1	3	2	-	-	2	-	-	2	2	2	2
190	KALAIVANI	38	2	2	3	2	6	3	2	12000	4	2	145	145	75	70	110	70	110	70	192	159	260	242	1	1	4	2	-	-	2	-	-	2	-	-	2	2	2	2
191	MAHESWARI	45	2	2	1	2	3	1	2	5500	5	4	148	148	75	85	120	80	110	70	-	-	-	-	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	1
193	KANCHANA	50	2	2	1	5	3	2	2	2000	2	4	156	156	60	56	150	90	140	80	-	-	-	-	2	-	-	1	1	4	2	-	-	2	-	-	2	2	2	2
194	VIJAYAKUMARI	45	2	2	1	5	2	4	2	2000	2	4	150	150	73	73	130	80	140	80	-	-	-	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
195	KASTHURI	44	2	2	1	5	1	4	2	2000	4	5	151	151	41	45	164	90	130	80	-	-	-	-	2	-	-	1	1	4	2	-	-	2	-	-	2	2	2	1
196	MAALI	50	1	2	1	2	3	6	2	5000	4	4	159	159	59	61	130	80	130	70	62	-	104	-	1	1	3	1	1	3	2	-	-	2	-	-	1	2	2	1
197	LALITHA	55	2	2	1	2	2	2	2	1000	2	5	156	156	70	67	110	80	110	80	108	-	122	-	2	-	-	1	1	8	2	-	-	2	-	-	1	2	2	1
198	PARVATHI	45	2	2	1	2	3	3	2	3000	6	5	154	-	56	-	130	80	-	-	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	1	2	2	2
201	SYED AMIR	57	1	2	2	2	4	1	2	5000	5	4	171	-	62	-	130	80	160	110	-	-	-	-	2	-	-	1	1	5	2	-	-	2	-	-	2	2	2	1
202	KESAVELU	73	1	2	1	2	3	3	3	5000	10	5	-	-	-	-	180	80	160	100	71	-	104	-	1	1	1	1	1	1	1	1	1	2	-	-	1	2	2	2
203	SAROJA	60	2	2	1	2	1	1	3	1000	5	5	151	-	40	-	135	70	150	110	-	-	-	-	2	-	-	1	1	7	2	-	-	2	-	-	2	2	2	1
204	RADHA	47	2	2	1	2	1	1	2	1500	4	5	159	-	70	-	120	80	150	90	-	-	-	-	2	-	-	1	1	5	2	-	-	2	-	-	2	2	2	1
205	NARASHIMALU	62	1	2	1	2	4	1	2	5000	5	4	171	-	78	-	-	-	-	-	-	-	-	-	1	1	6	1	1	6	2	-	-	2	-	-	2	2	2	1
206	MAHESH	47	1	2	1	2	3	3	2	5000	5	4	162	-	51	-	110	70	110	80	71	101	128	185	1	1	5	2	-	-	2	-	-	2	-	-	2	2	2	1
207	RANGAN	61	1	2	1	2	1	1	2	2000	2	4	161	161	48	48	130	80	140	100	81	106	154	221	1	1	6	1	1	6	2	-	-	2	-	-	1	2	2	2
208	DILSHATH	40	2	2	2	2	2	1	2	5000	6	5	153	-	80	-	130	90	150	100	109	107	139	176	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
209	GUNASEKARAN	39	1	2	1	2	3	4	2	4000	7	5	160	-	63	-	100	60	100	60	132	146	339	364	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
210	THIRUPATHI	34	1	2	1	2	2	6	2	5000	6	5	163	-	69	-	140	90	160	100	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
211	PATTU	60	2	2	1	2	1	1	3	3000	6	5	150	-	58	-	130	90	150	100	-	-	-	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
212	MAHENDRAN	43	1	2	1	2	3	6	2	7000	5	4	163	-	69	-	120	80	140	100	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
213	PERUMA	50	2	2	1	2	1	1	3	8000	8	4	155	-	64	-	140	100	160	100	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
214	SUMATHI	37	2	2	1	3	2	2	2	900	2	5	154	-	53	-	120	90	150	90	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
215	VIJAYA	55	2	2	1	2	2	2	2	800	5	5	146	146	70	75	150	80	170	90	92	80	115	117	2	-	-	1	1	2	2	-	-	2	-	-	1	2	2	2

216	SUNDERASAN	56	1	2	1	2	1	2	3	900	7	5	176	176	67	68	100	60	120	70	156	94	208	241	1	1	1	2	-	-	2	-	-	2	-	-	1	2	2	2
217	SHANMUGAM	70	1	2	1	2	1	2	2	1000	2	5	151	151	52	50	110	70	160	80	108	94	192	225	1	1	2	2	-	-	2	-	-	2	-	-	1	2	1	2
218	NATARAJAN	54	1	2	1	2	1	2	3	1000	8	5	169	169	87	90	140	90	140	90	90	112	121	138	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	1
219	ALTHAAF	36	1	2	2	2	3	5	3	2000	7	5	164	164	73	80	130	90	150	100	89	127	125	156	2	-	-	1	1	1	2	-	-	2	-	-	1	2	2	2
220	DEVAN	49	1	2	1	2	2	2	2	1500	5	5	175	175	59	60	150	90	180	90	108	124	149	152	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
221	MUNI	36	2	2	2	2	1	1	2	3000	3	4	159	159	63	60	140	80	140	90	84	188	152	300	1	1	1	1	1	1	2	-	-	2	-	-	2	1	2	2
222	AVARANJI	50	2	2	1	2	2	2	2	1500	4	5	145	145	43	42	120	80	140	80	89	75	118	163	2	-	-	1	1	2	2	-	-	2	-	-	1	2	2	1
223	GAJENDRAN	37	1	2	1	2	1	2	2	1000	5	5	158	158	72	80	120	80	150	100	-	-	-	-	2	-	-	1	1	2	2	-	-	2	-	-	1	2	2	2
224	SENBAGAVALLI	57	2	2	1	2	2	1	3	2000	2	4	155	155	64	68	120	80	150	90	135	187	157	290	1	1	2	1	1	2	2	-	-	2	-	-	1	2	2	2
225	JANAKIRAMAN	71	1	2	1	2	4	1	2	1000	2	5	167	167	76	87	140	90	170	90	126	215	159	370	1	1	3	1	1	3	2	-	-	2	-	-	1	2	2	2
226	SRINIVASAN	66	1	2	1	2	2	1	3	1000	5	5	174	174	54	56	130	70	150	80	127	159	167	219	1	1	2	1	1	2	2	-	-	2	-	-	1	2	2	2
227	NOORNISHA	65	2	2	2	2	1	1	3	3000	7	5	155	155	58	64	110	70	160	100	139	186	165	294	1	1	3	1	1	3	2	-	-	2	-	-	2	2	2	1
228	MANICKAM	61	1	2	1	2	3	1	3	2500	4	5	155	154	46	49	130	70	160	90	180	186	187	260	1	1	2	1	1	2	2	-	-	2	-	-	1	2	2	2
229	AMIRTHAM	59	2	2	1	2	2	1	3	3500	2	4	154	154	55	61	140	80	190	90	101	121	127	150	2	-	-	1	1	3	2	-	-	2	-	-	1	2	2	2
230	RAMAN	65	1	2	1	2	3	3	3	3000	6	5	155	155	52	55	130	80	180	100	-	-	-	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	1
231	ANDICHIYAMMAL	65	2	2	1	2	1	1	3	3000	5	5	146	146	38	46	130	90	160	90	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	1	2	2	2
232	KALI	56	1	2	1	2	1	4	3	900	8	5	161	161	47	56	110	70	160	90	202	306	327	378	1	1	2	2	-	-	2	-	-	2	-	-	1	2	2	2
233	ORANGAMMAL	60	2	2	1	2	1	1	2	3000	6	5	156	156	53	53	130	80	140	100	96	82	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
234	AMSA	50	2	2	1	2	2	2	2	4000	5	5	170	170	70	82	130	80	150	100	90	98	-	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
236	DHANALAKSHMI	70	2	2	1	2	1	1	1	1000	1	4	150	150	75	76	160	90	190	90	88	188	225	289	1	1	2	1	1	2	2	-	-	2	-	-	1	2	2	2
237	SAKUNTHALA	65	2	2	1	2	2	1	2	2000	4	5	148	148	53	54	140	90	160	70	94	83	121	110	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
238	KUPPAN	61	1	2	1	2	3	4	3	20000	4	2	150	150	55	58	120	70	140	90	94	154	163	296	1	1	1	2	-	-	2	-	-	2	-	-	1	2	2	2
239	SOUNDARI	60	2	2	1	2	2	1	2	12000	4	2	150	150	50	39	110	70	130	80	142	120	327	278	1	1	2	2	-	-	2	-	-	2	-	-	2	2	2	2
240	POUNAMMA	62	2	2	1	2	1	1	3	12000	4	2	148	148	55	45	140	90	150	90	220	272	296	390	1	1	2	1	1	2	2	-	-	2	-	-	1	2	2	2
241	UMA	48	2	2	1	2	1	1	2	1000	2	5	150	150	60	62	120	80	120	80	91	89	138	273	1	1	1	2	-	-	2	-	-	2	-	-	1	2	2	2
242	MALLIGA	45	2	2	1	2	3	2	2	5000	4	4	147	147	53	55	140	90	160	100	35	85	194	173	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
243	GIRIJA	50	2	2	1	2	1	2	2	5000	4	4	157	157	70	65	160	90	160	100	155	284	299	402	1	1	2	1	1	2	2	-	-	2	-	-	1	2	2	2
244	AMULU	42	2	2	1	2	1	1	3	3000	4	5	148	148	45	65	140	90	150	100	200	170	375	298	1	1	3	1	1	3	2	-	-	2	-	-	1	2	2	2
245	PANTALLI	55	2	2	1	2	1	1	2	5000	5	4	159	159	57	58	110	70	160	100	132	163	216	256	1	1	1	1	1	1	2	-	-	2	-	-	1	2	2	2

246	GIRIJA	58	2	2	1	2	1	2	2	6000	10	5	157	157	68	70	120	80	140	90	110	224	165	316	1	1	1	1	1	1	2	-	-	2	-	-	1	2	2	2
247	LATHA	37	2	2	1	2	3	1	2	5000	4	4	146	146	42	43	130	80	130	80	73	246	143	316	1	1	1	2	-	-	2	-	-	2	-	-	1	2	2	2
248	RAGHU	36	1	2	1	2	3	1	2	6000	2	2	156	-	65	-	140	80	-	-	103	-	158	-	1	1	1	2	-	-	2	-	-	2	-	-	1	2	2	2
249	KASTHURI	45	2	2	1	2	1	1	2	10000	5	3	164	164	58	64	130	80	150	100	102	110	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
250	SANGOTHAI	44	2	2	1	2	2	1	2	3000	3	4	166	166	55	57	140	80	150	100	88	92	241	284	1	1	1	1	1	1	2	-	-	2	-	-	1	2	2	2
251	STALIN	39	1	2	3	1	1	1	1	1000	1	4	159	-	73	-	150	100	120	80	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	1	2	2	2
252	MEHERUNISHA	56	2	2	2	2	1	1	2	4000	7	5	133	133	36	46	140	70	120	80	81	-	-	-	2	-	-	1	1	2	2	-	-	2	-	-	1	2	2	2
254	ASOKAN	43	1	2	1	2	4	5	2	6000	5	4	169	169	73	79	130	70	160	80	-	-	-	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
255	NARAYANAN	40	1	2	1	2	1	2	2	5000	4	4	170	170	64	62	110	70	100	70	119	135	160	199	1	1	2	2	-	-	2	-	-	2	-	-	2	2	1	2
261	CHINNATHAMBI	58	1	2	1	2	1	2	3	3000	5	5	170	170	68	78	130	80	150	90	90	108	126	148	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
262	RANI	52	2	2	1	2	1	2	3	2000	5	5	158	158	66	74	136	80	150	100	102	118	132	148	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
263	MUNUSAMY	60	1	2	1	2	1	2	3	3000	5	5	171	171	65	71	150	80	160	100	112	114	136	140	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
264	RAJAKUMARI	45	2	2	1	2	1	2	3	2000	5	5	168	168	75	80	140	86	160	90	110	101	166	146	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
265	PERUMAL	55	1	2	1	2	2	2	2	3000	3	4	162	162	54	60	140	80	160	90	97	115	100	136	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
266	MALLIGA	50	2	2	1	2	1	2	3	2000	5	5	168	168	60	65	120	80	140	90	86	92	128	132	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
267	SUBRAMANI	57	1	2	1	2	1	2	3	2000	5	5	160	160	52	60	130	80	160	100	102	120	142	160	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
268	VIJAYA	45	2	2	1	2	1	2	3	2000	5	5	148	148	48	55	140	90	160	90	96	116	136	148	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
269	THIRUMAL	35	1	2	1	1	4	4	3	5000	5	4	170	170	60	75	110	70	110	60	80	112	199	228	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
270	NAGESWARI	45	2	2	1	2	1	2	2	2000	3	5	158	-	54	-	110	60	130	80	104	182	223	262	1	1	1	2	-	-	2	-	-	2	-	-	1	2	2	2
271	SHANMUGAM	42	1	2	1	2	2	2	3	4000	6	5	170	170	74	68	140	80	210	100	120	114	141	142	2	-	-	1	1	1	2	-	-	2	-	-	2	1	2	2
272	ANJEL SHEEBA MARY	34	2	2	3	2	5	3	2	8000	3	3	142	142	92	80	140	80	160	100	106	132	142	148	2	-	-	1	1	1	2	-	-	2	-	-	1	2	2	2
273	SARAVANAN	40	1	2	1	2	3	5	2	5000	4	4	165	165	74	78	110	70	120	70	140	150	180	320	1	1	2	2	-	-	2	-	-	2	-	-	2	2	1	2
274	BALARAMAN	42	1	2	1	2	3	3	3	5000	4	4	160	160	68	68	110	70	110	70	130	160	240	210	1	1	2	2	-	-	2	-	-	2	-	-	2	2	1	2
275	JEGANATHAN	44	2	2	1	2	2	4	2	4000	4	4	152	152	64	68	110	70	130	80	160	149	280	340	1	1	2	2	-	-	2	-	-	2	-	-	1	2	2	2
276	LOGANATHAN	43	1	2	1	2	3	1	2	2000	5	5	158	158	63	68	110	70	120	80	98	117	142	149	2	-	-	1	1	3	2	-	-	2	-	-	2	2	2	2
277	SELVAKUMARI	40	2	2	3	2	2	2	2	4000	6	5	149	149	52	54	110	70	130	80	142	180	244	360	1	1	2	2	-	-	2	-	-	2	-	-	1	2	2	2
278	MUNIYAMMA	45	2	2	1	1	1	2	2	2000	2	4	148	148	50	48	130	80	160	100	78	116	142	151	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	1
279	RAJAKUMARI	45	2	2	1	2	1	2	3	2000	4	5	152	152	62	72	110	70	110	70	160	192	180	286	1	1	2	2	-	-	2	-	-	2	-	-	2	2	2	2
280	KANAGAPOOSANAM	45	2	2	1	2	1	2	1	1500	5	5	150	150	46	45	130	80	160	80	98	142	142	149	1	1	2	1	1	3	2	-	-	2	-	-	2	2	2	2

281	DEVAKI	42	2	2	1	2	1	1	2	3000	5	5	148	148	48	51	140	80	160	100	101	116	142	160	1	1	2	1	1	2	2	-	-	2	-	-	2	2	1	2
282	BABY	58	2	2	1	2	2	1	3	4000	6	5	160	160	54	56	110	80	140	90	107	130	149	170	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	1
283	KANAGU	62	2	2	1	2	1	2	1	1200	1	4	154	154	60	67	120	90	170	100	97	139	140	180	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	1
284	MAGIMAIDAS	40	1	2	3	2	5	6	3	15000	5	2	155	155	80	77	110	70	130	80	116	142	166	204	1	1	5	1	1	5	2	-	-	2	-	-	2	2	2	2
285	ASOKAN	53	1	2	1	2	3	6	3	3000	5	5	156	156	61	71	140	90	140	90	96	169	165	352	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
286	AMUTHA	49	2	2	1	2	3	6	2	3000	3	4	154	154	69	72	150	90	170	90	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
287	CHANDRASEKAR	46	1	2	1	2	3	3	3	3500	5	5	164	164	73	70	140	90	120	80	195	81	248	238	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
288	YESUMANI	40	2	2	3	2	3	3	2	2500	3	5	158	154	57	48	110	70	120	70	113	120	264	259	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
290	NIRMALA	40	2	2	1	2	1	4	2	2000	4	5	170	155	68	69	-	140	90	150	90	151	296	299	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
291	KAANTHA	66	2	2	1	2	2	4	2	2000	3	5	158	158	61	56	130	80	160	90	103	81	138	123	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
292	KRISHNAMOORTHY	59	1	2	1	2	3	3	2	4000	2	3	160	160	60	69	160	90	180	100	194	144	352	216	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
293	PATTAMMAL	65	2	2	1	2	1	2	1	2000	1	3	152	156	55	59	140	80	140	90	94	70	160	105	1	1	1	1	1	2	2	-	-	2	-	-	2	2	2	2
294	SAROJA	71	2	2	1	2	1	1	3	2000	6	5	142	142	52	54	150	70	130	80	126	144	190	296	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
295	JEYA	50	2	2	1	2	1	1	2	2000	4	5	140	140	40	38	120	80	130	90	93	113	175	186	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
296	KOKILA	40	2	2	1	2	2	4	3	3000	6	5	-	-	-	-	110	80	140	80	98	182	158	273	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
297	SIDHIKABEGAM	48	2	2	2	2	2	1	2	2000	3	5	160	-	60	-	130	70	140	90	180	119	340	368	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
298	JOHN	67	1	2	3	2	2	3	2	3000	6	5	154	-	60	-	180	80	-	-	114	-	236	-	1	1	2	1	1	2	2	-	-	2	-	-	2	2	2	2
299	JEGASEESAN	70	1	2	1	2	1	2	2	2000	4	5	160	-	66	-	130	70	-	-	180	-	274	-	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
300	SHAJIRA	44	2	2	2	2	3	1	3	3000	6	5	164	-	65	-	130	90	130	70	104	141	217	299	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
302	MANOKARAN	58	1	2	1	2	1	2	3	3000	6	5	158	158	60	68	150	90	180	90	106	152	192	196	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
304	NAJMABEGAM	40	2	2	2	2	2	1	3	3000	5	5	140	-	58	-	120	70	-	-	106	-	198	-	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
305	ANGAMMAL	61	2	2	1	2	1	2	1	2000	1	3	150	150	54	58	110	80	160	90	104	120	130	113	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	1
306	RAMESH	46	1	2	1	2	3	3	3	15000	5	2	162	162	60	54	140	90	150	110	102	-	148	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	1
307	VISWANATHAN	53	1	2	1	2	1	4	2	5000	5	4	158	158	65	73	140	90	160	110	128	136	176	218	1	1	2	1	1	1	2	-	-	2	-	-	1	2	2	2
308	RATHINAM	59	1	2	1	2	1	5	3	7000	6	4	166	166	77	83	160	100	180	110	104	158	168	236	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	1
311	MARIMUTHU	68	1	2	1	2	1	3	2	2000	5	5	152	152	49	45	150	90	150	100	102	96	136	158	2	-	-	1	1	2	2	-	-	2	-	-	1	2	2	2
312	KUMAR	52	1	2	1	2	2	4	2	6000	7	5	158	158	73	71	160	100	200	100	102	96	163	136	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	1
313	SUBRAMANI	52	1	2	2	1	3	2	2	3000	8	5	154	154	63	60	140	90	160	110	98	114	134	158	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
314	JEYARAMAN	65	1	2	1	2	2	4	2	4000	2	3	162	162	65	66	130	90	150	100	98	114	148	163	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	1

316	CHANDRIKA	43	2	2	1	2	1	2	2	7000	5	4	153	153	55	60	140	100	180	100	100	87	141	156	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
317	POORNIMA	43	2	2	1	2	2	1	2	5000	5	4	157	157	55	52	140	100	130	80	89	110	137	143	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
318	BHAHAVATHIRAM	45	1	2	1	2	3	2	2	7000	4	4	165	165	55	52	110	70	110	80	83	145	156	183	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
319	GOVINDARAJ	40	1	2	1	2	4	3	2	10000	4	3	165	165	73	82	150	90	200	110	97	88	138	119	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
320	VINAYAGAM	45	1	2	1	2	1	2	2	7000	4	4	157	157	53	58	130	80	170	90	89	101	137	156	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
321	CHERAPANDI	40	1	2	1	2	3	4	2	5000	5	4	155	155	59	50	140	80	150	90	84	108	141	128	2	-	-	1	1	1	2	-	-	1	1	1	2	2	2	2
322	THANJAMMAL	44	2	2	1	2	1	1	2	5000	4	4	152	152	65	73	110	70	110	80	87	127	142	178	1	1	3	2	-	-	2	-	-	2	-	-	2	2	2	2
323	SAVITHIRI	40	2	2	1	2	3	2	2	5000	6	5	162	162	59	61	170	100	110	70	88	114	128	126	2	-	-	1	1	1	2	-	-	2	-	-	2	1	2	2
324	MURUGESAN	37	1	2	1	2	1	2	2	3000	3	4	165	165	47	57	110	70	120	80	108	93	143	138	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
325	ELIAMMA	40	2	2	1	2	1	4	2	5000	5	4	153	153	50	54	150	100	180	100	88	118	135	142	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
326	MOORTHI	39	1	2	1	2	2	2	2	3500	5	5	158	158	50	50	130	90	150	100	-	-	-	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
327	SIVAKUMAR	30	1	2	1	2	4	3	2	6000	4	4	159	159	57	55	120	80	150	70	-	-	-	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
328	PESIATHAMBI	76	1	2	1	2	1	2	1	1000	1	4	153	153	58	60	120	80	136	80	-	-	-	-	2	-	-	1	1	3	2	-	-	2	-	-	2	2	2	2
329	RAMASAMY	52	1	2	1	2	1	2	2	2000	3	5	159	159	70	75	140	80	160	100	-	-	-	-	2	-	-	1	1	6	2	-	-	2	-	-	2	2	2	2
330	KARUNAMOORTHY	51	1	2	1	2	3	2	2	5000	4	4	158	158	65	64	110	70	140	80	110	220	196	330	1	1	3	1	1	3	2	-	-	2	-	-	2	2	2	2
331	CHITRA	40	2	2	1	2	4	2	2	2000	3	5	153	153	60	58	120	80	136	88	-	160	-	207	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
332	RANJITHAM	60	2	2	1	2	1	2	1	1000	1	4	156	156	49	48	110	70	140	90	106	91	173	168	2	-	-	1	1	3	2	-	-	2	-	-	1	2	2	2
333	SUNDRAMMAL	55	2	2	1	2	1	2	1	1000	1	4	155	155	62	65	110	70	150	100	112	167	224	282	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	2
334	THINARDHAN	50	1	2	1	2	2	3	2	3000	5	5	160	160	72	74	130	90	150	100	162	248	220	362	1	1	3	1	1	2	2	-	-	2	-	-	1	2	2	2
335	CHINNATHAMBI	60	1	2	1	2	2	3	3	5000	5	4	161	161	68	68	110	70	120	80	110	221	208	262	1	1	5	2	-	-	2	-	-	2	-	-	2	2	2	2
336	ANWAR BASHA	65	1	2	2	2	1	5	2	5000	3	4	162	162	72	82	130	90	140	90	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	1
337	JABEEN	57	2	2	2	2	2	3	3	4000	6	5	156	156	76	80	160	120	160	110	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	1
338	BABU	56	1	2	2	2	1	2	2	4000	4	4	168	168	56	58	140	90	150	100	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	1
339	CHANDRASEKAR	63	1	2	1	2	1	1	2	3500	4	5	152	152	56	58	160	90	170	90	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	1
340	JERINA	61	2	2	2	2	1	1	2	4000	6	5	155	155	64	68	110	80	110	70	118	151	142	202	1	1	2	1	1	1	2	-	-	2	-	-	1	2	2	2
341	MURUGAMMAL	61	2	2	1	2	1	1	2	3000	5	5	146	146	41	44	120	60	160	80	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	1	2	2	2
342	SAROJA	61	2	2	1	2	1	1	2	3000	4	5	152	152	61	67	120	70	140	80	108	-	121	-	2	-	-	1	1	1	2	-	-	2	-	-	1	2	2	2
343	KURSHEETH	50	2	2	2	2	1	1	2	3000	5	5	154	154	56	60	140	70	130	90	140	162	182	201	1	1	2	2	-	-	2	-	-	2	-	-	1	2	2	2
344	JAYAMMA	61	2	2	1	2	1	1	2	3500	5	5	153	153	71	76	100	70	140	90	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	1	2	2	2

345	CHANBE	66	2	2	2	2	1	1	2	3000	3	4	150	150	37	40	130	80	180	100	-	-	-	-	2	-	-	1	1	2	2	-	-	2	-	-	1	2	2	2
346	BASHEERA	61	2	2	2	2	1	1	2	3500	8	5	148	148	60	56	100	60	140	80	103	92	139	181	1	1	1	1	1	1	2	-	-	2	-	-	2	2	2	1
347	BOMMI	60	2	2	1	2	1	2	2	3000	4	5	155	155	64	65	110	70	120	70	148	-	237	-	1	1	1	1	1	1	2	-	-	2	-	-	1	2	2	2
348	JOTHIKA	57	2	2	2	2	1	1	2	3500	7	5	146	146	45	45	120	70	130	80	104	-	118	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	2
349	AMMAI	70	2	2	2	2	1	1	3	4500	6	5	162	162	61	68	130	80	180	100	-	-	-	-	2	-	-	1	1	3	2	-	-	2	-	-	2	2	2	1
350	PAPPAMMAL	65	2	2	1	2	1	1	2	3000	2	4	154	154	70	78	130	70	140	90	86	90	-	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	1
351	PATTAMMA	50	2	2	1	2	1	1	2	3000	3	4	152	152	53	60	150	80	150	90	275	285	374	360	1	1	2	1	1	2	2	-	-	2	-	-	1	1	2	2
352	MUNIRAJ	66	1	2	1	2	2	3	2	10000	4	3	166	166	80	82	140	90	160	110	112	179	198	322	1	1	2	1	1	2	1	1	2	2	-	-	2	2	2	2
353	THILAGAVATHI	40	2	2	1	2	3	1	2	5000	5	4	153	153	60	65	120	70	140	90	82	136	140	148	1	1	4	1	1	4	2	-	-	2	-	-	2	2	2	1
354	THIRUNAVUKARASU	56	1	2	1	2	3	6	2	10000	4	3	153	153	90	98	140	90	150	90	99	-	136	-	2	-	-	1	1	5	2	-	-	2	-	-	2	2	2	1
355	VENKATESAN	44	1	2	1	2	3	3	2	5000	5	4	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	1
356	BARAKATH	35	1	2	2	2	2	3	1	3000	3	4	160	-	81	-	140	80	148	96	98	116	180	232	1	1	1	1	1	1	2	-	-	2	-	-	1	2	2	2
357	MAHENDRAN	58	1	2	1	2	3	3	2	10000	5	3	156	156	65	70	140	80	150	90	92	90	140	152	2	-	-	1	1	5	1	1	2	2	-	-	2	2	2	1
358	SHANTHI	42	2	2	2	2	2	1	2	2000	4	5	154	154	60	62	140	80	150	80	89	100	134	130	2	-	-	1	1	3	2	-	-	2	-	-	1	2	2	2
359	HABIBUISHA	53	2	2	2	2	1	1	2	2000	5	5	164	164	62	64	120	90	140	90	106	98	154	224	1	1	2	1	1	2	2	-	-	2	-	-	2	2	2	1
360	NALINI	49	2	2	1	2	2	1	1	3000	2	4	150	150	52	55	120	80	120	70	79	110	156	209	1	1	1	2	-	-	2	-	-	2	-	-	2	2	2	2
361	GOVINDAMMAL	43	2	2	1	2	1	1	2	1000	2	5	145	145	50	53	120	70	130	80	84	-	132	-	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	1
362	LAKSHMI	45	2	2	1	2	1	1	2	3000	4	5	164	164	92	106	130	90	160	100	79	95	124	146	2	-	-	1	1	2	1	1	2	2	-	-	1	2	2	2
363	SELVI	41	2	2	1	2	1	1	2	1200	5	5	149	149	52	55	130	80	140	86	79	85	126	132	2	-	-	1	1	2	2	-	-	2	-	-	2	2	2	1
364	THENNARASU	37	1	2	1	2	2	4	2	1200	4	5	160	160	58	64	120	90	160	110	92	79	136	116	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	1
365	SARASWATHI	45	1	2	1	2	2	1	2	3000	5	5	158	158	60	68	130	80	150	90	88	85	125	127	2	-	-	1	1	4	2	-	-	2	-	-	2	2	2	2
366	VENUGOPAL	40	1	2	1	2	2	3	2	3000	4	5	165	165	69	70	130	70	140	90	80	112	132	210	1	1	3	2	-	-	2	-	-	2	-	-	2	2	2	2
367	BALU	38	1	2	1	2	2	4	2	2500	4	5	170	170	60	70	140	90	170	100	92	116	156	232	1	1	2	1	1	2	2	-	-	2	-	-	2	2	2	2
368	VELU	45	1	2	1	2	1	3	2	1500	4	5	162	162	63	65	120	70	130	70	82	86	116	138	2	-	-	1	1	4	2	-	-	2	-	-	2	2	2	1
369	SHAJITHA	39	2	2	2	2	2	1	2	5000	6	5	164	164	64	68	140	90	170	110	95	102	136	126	2	-	-	1	1	1	2	-	-	2	-	-	2	2	2	2
370	BALARAMAN	42	1	2	1	2	1	1	2	3000	5	5	160	160	58	60	130	80	140	80	89	112	154	210	1	1	3	2	-	-	2	-	-	2	-	-	2	2	2	1
371	SANTHA	50	2	2	1	2	3	1	2	3000	4	5	150	150	65	74	120	80	150	80	92	98	166	153	2	-	-	1	1	4	2	-	-	2	-	-	2	2	2	1
372	ABDUL SUKKUR	43	1	2	2	2	1	5	2	3000	5	5	158	158	70	74	140	80	150	96	86	79	143	160	2	-	-	1	1	3	2	-	-	2	-	-	1	2	2	2
373	JAIMUNISA	60	2	2	2	2	1	1	3	12000	5	3	150	150	45	40	120	70	130	80	92	80	349	250	1	1	2	1	1	2	2	-	-	2	-	-	1	2	2	2